DVP-CX860/CX870D

RMT-D123A/D123P/D124A

SERVICE MANUAL

Self Diagnosis Supported model

US Model
Canadian Model
DVP-CX860/CX870D

AEP Model
UK Model
DVP-CX860

Photo : DVP-CX860
RMT-D123A

SPECIFICATIONS

CD/DVD player

Laser Semiconductor laser

Signal format system
NTSC: CX860: US,CND / CX870D
PAL (NTSC): CX860: AEP,UK

Audio characteristics

Frequency response
DVD (PCM 96 kHz): 2 Hz to 44 kHz
(±1.0 dB)* : CX860, (±0.5 dB) : CX870D
DVD (PCM 48 kHz): 2 Hz to 22 kHz
(±0.5 dB)
CD: 2 Hz to 20 kHz (±0.5 dB)

Signal-to-noise ratio
More than 110 dB: CX860
More than 115 dB: CX870D
(AUDIO OUT connectors only)

Harmonic distortion
Less than 0.003 % : CX860
Less than 0.0025 % : CX870D

Dynamic range
More than 100 dB (DVD)
More than 97 dB (CD): CX860
More than 98 dB (CD): CX870D

Wow and flutter
Less than detected value
(±0.001% W PEAK)

Outputs/Inputs

	Jack type	Output/input level	Load impedance
AUDIO OUT (1, 2)	Phono jacks	2 Vrms (at 50 kilohms)	Over 10 kilohms
DIGITAL OUT (OPTICAL)	Optical output connector	–18 dBm	Wave length: 660 nm
DIGITAL OUT (COAXIAL)	Phono jack	0.5 Vp-p	75 ohms terminated
VIDEO OUTPUT (1, 2)*1 OUTPUT (1)*2	Phono jacks	1.0 Vp-p	75 ohms, sync negative
S VIDEO OUTPUT (1, 2)*1	4-pin mini DIN	Y: 1.0 Vp-p C: 0.286 Vp-p*1	75 ohms, sync negative 75 ohms terminated
OUTPUT (1)*2		C: 0.3 Vp-p*2	75 ohms terminated
COMPONENT VIDEO OUT (Y, PB, PR)	Phono jacks	Y: 1.0 Vp-p PB, PR: 0.7 Vp-p	75 ohms, sync negative 75 ohms
S-LINK*3 (CONTROL S IN)	Mini jack	–	–
WOOFER OUT*3	Phono jack	2 Vrms (at 50 kilohms)	Over 10 kilohms
5.1 CH OUTPUT*4	Phono jack	2 Vrms (at 10 kilohms)	Over 10 kilohms
MEGA CONTROL	Mini jack	–	–
AUDIO IN*1 AUDIO IN*2 (R, L)	Phono jack	2 Vrms	47 kilohms

*1 CX860: US,CND / CX870D
*2 CX860: AEP,UK
*3 CX860: US,CND,AEP / CX870D
*4 CX870D

General

Power requirements
120 V AC, 60 Hz (CX860: US,CND / CX870D),
220 – 240 V AC, 50 / 60 Hz (CX860: AEP,UK),

Power consumption
18 W (CX860: US,CND),
19W (CX860: AEP,UK), 20W (CX870D)

Dimensions (approx.)
430 × 158 × 415 mm (17 × 6 1/4 × 16 3/8 in.)
(w / h / d) incl. projecting parts

Mass (approx.)
7.0 kg (15 lb 7 oz)

Operating temperature
5 °C to 35 °C (41 °F to 95 °F)

Operating humidity
25 % to 80 %

Supplied accessories

- Audio / video / S-link (control S) connecting cord (1)
- S video cord (1)
- Remote commander (remote)
  RMT-D123A (1)(CX860: US,CND)
  RMT-D123P (1)(CX860: AEP,UK)
  RMT-D124A (1)(CX870D)
- Size AA (R6) batteries (2)

* *The signals from AUDIO OUT connectors are measured. When you play PCM sound tracks with a 96 kHz sampling frequency, the output signals from the DIGITAL OUT (OPTICAL, COAXIAL) are converted to 48 kHz (sampling frequency).*

Design and specifications are subject to change without notice.

- Abbreviation
  CND: Canadian model

ENERGY STAR® is a U.S. registered mark.
As an ENERGY STAR® Partner, Sony Corporation has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

DVD VIDEO COMPACT disc DIGITAL VIDEO

CD/DVD PLAYER

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

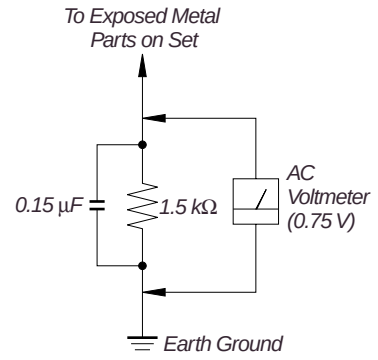


Fig. A. Using an AC voltmeter to check AC leakage.

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

CAUTION:
The use of optical instrument with this product will increase eye hazard.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

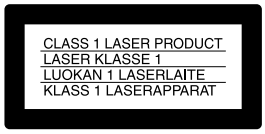
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA TW-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

TABLE OF CONTENTS

SERVICE NOTE ····· 1-1

SELF-DIAGNOSIS FUNCTION ····· 1-1

1. GENERAL

About This Manual ····· 1-1
This Player Can Play the Following Discs ····· 1-1
Precautions ····· 1-1
Notes About the Discs ····· 1-1
Getting Started ····· 1-1
Unpacking ····· 1-1
TV Hookups ····· 1-2
Receiver (Amplifier) Hookups ····· 1-2
5.1 Channel Surround Hookups ····· 1-3
Selecting the Language for the On-Screen Display ····· 1-3
Operation Sound Effects (Sound Feedback) ····· 1-3
Inserting Discs ····· 1-4
Playing Discs ····· 1-4
Playing Discs ····· 1-4
Playing Side B (FLIP) ····· 1-5
Playing at Various Speeds/Frame by Frame ····· 1-5
Resuming Playback from the Point Where You Stopped the Disc (Resume Play) ····· 1-5
Using the DVD 's Menu ····· 1-6
Playing VIDEO CDs with PBC Functions (PBC Playback) ···· 1-6
Using the Front Panel Display ····· 1-6
Displaying the Disc Information (Disc Explorer) ····· 1-7
Filing Discs in the Folder (Disc Explorer - File Mode) ····· 1-7
Labeling Discs and Folders (Disc Explorer - Edit Mode) ····· 1-8
Sorting Discs (Disc Explorer - Sort Mode) ····· 1-8
Using Various Functions with the Control Menu ····· 1-9
Using the Control Menu Display ····· 1-9
Control Menu Item List ····· 1-9
Searching for a Disc/Title/Chapter/Track/Index/Scene ····· 1-10
Checking the Playing Time and Remaining Time ····· 1-10
Selecting a Starting Point Using the Time Code ····· 1-10
Viewing the Disc Information ····· 1-10
Changing the Sound ····· 1-10
Displaying the Subtitles ····· 1-11
Changing the Angles ····· 1-11
Digital Cinema Sound Settings ····· 1-11
Checking the Play Information ····· 1-12
Locking Discs (Custom Parental Control) ····· 1-12
Selecting the Disc Mode (1 Disc or All Discs) ····· 1-12
Creating Your Own Program (Program Play) ····· 1-13
Playing in Random Order (Shuffle Play) ····· 1-13
Playing Repeatedly (Repeat Play) ····· 1-13
Repeating a Specific Portion (A – B Repeat) ····· 1-14
Using the Quick Reference Screen (VIEWER) ····· 1-14
Settings and Adjustments ····· 1-15
Using the Setup Display ····· 1-15
Setup Display Item List ····· 1-15
Setting the Display Language or Sound Track (LANGUAGE SETUP) ····· 1-15
Settings for the Display (SCREEN SETUP) ····· 1-16
Custom Settings (CUSTOM SETUP) ····· 1-16
Settings for the Sound (AUDIO SETUP) ····· 1-17
Controlling Your TV or AV Receiver (Amplifier) with the Supplied Remote ····· 1-18
Controlling the CD Changer (Mega Control) ····· 1-18
Additional Information ····· 1-19
Troubleshooting ····· 1-19
Self-diagnosis function ····· 1-19
Glossary ····· 1-20
Language Code List ····· 1-20
Index to Parts and Controls ····· 1-20

2. DISASSEMBLY

2-1. OVERALL ····· 2-1
2-2. FRONT PANEL-1 ····· 2-1
2-3. FRONT PANEL-2 ····· 2-2
2-4. AI-20, MB-94 BOARDS ····· 2-3
2-5. JACK PLATE, CV-34 BOARD ····· 2-3
2-6. POWER BLOCK, R PANEL ····· 2-3
2-7. TURN TABLE ASSEMBLY ····· 2-4
2-8. BASE UNIT SECTION ····· 2-4
2-9. MECHANICAL CHASSIS SECTION ····· 2-5
2-10. T DRIVING ASSEMBLY ····· 2-5
2-11. INTERNAL VIEWS ····· 2-6
2-12. CIRCUIT BOARDS LOCATION ····· 2-7

3. BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM ····· 3-1
3-2. RF/SERVO BLOCK DIAGRAM ····· 3-3
3-3. SIGNAL PROCESS BLOCK DIAGRAM ····· 3-5
3-4. SYSTEM CONTROL BLOCK DIAGRAM ····· 3-7
3-5. VIDEO EURO BLOCK DIAGRAM ····· 3-9
3-6. AUDIO BLOCK DIAGRAM ····· 3-11
3-7. INTERFACE CONTROL BLOCK DIAGRAM (1/2) ·· 3-13
3-8. INTERFACE CONTROL BLOCK DIAGRAM (2/2) ·· 3-15
3-9. POWER BLOCK DIAGRAM ····· 3-17

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/2) ····· 4-1
FRAME SCHEMATIC DIAGRAM (2/2) ····· 4-3
4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS ····· 4-5
• TK-59 (RF/SERVO) PRINTED WIRING BOARD ····· 4-7
• TK-59 (RF/SERVO) SCHEMATIC DIAGRAM ····· 4-9
• MB-94 (ARP, AV DECODER, 16M SDRAM, VGA, SERVO CONTROL, CONNECTOR, SYSTEM CONTROL, 32M FLASH, PLL, FGA-C, AUDIO) PRINTED WIRING BOARD ····· 4-11
• MB-94 (ARP)(1/10) SCHEMATIC DIAGRAM ····· 4-13
• MB-94 (AV DECODER)(2/10) SCHEMATIC DIAGRAM ····· 4-15
• MB-94 (16M SDRAM)(3/10) SCHEMATIC DIAGRAM ····· 4-17
• MB-94 (VGA)(4/10) SCHEMATIC DIAGRAM ····· 4-19
• MB-94 (SERVO CONTROL)(5/10) SCHEMATIC DIAGRAM ····· 4-21
• MB-94 (CONNECTOR)(6/10) SCHEMATIC DIAGRAM ····· 4-23
• MB-94 (SYSTEM CONTROL)(7/10) SCHEMATIC DIAGRAM ····· 4-25
• MB-94 (32M FLASH, PLL)(8/10) SCHEMATIC DIAGRAM ····· 4-27
• MB-94 (FGA-C)(9/10) SCHEMATIC DIAGRAM ····· 4-29
• MB-94 (AUDIO)(10/10) SCHEMATIC DIAGRAM ····· 4-31
• AI-20 (VIDEO)(1/3) SCHEMATIC DIAGRAM ····· 4-33
• AI-20 (2.6CH AUDIO)(2/3) SCHEMATIC DIAGRAM ····· 4-35
• AI-20 (INTERFACE)(3/3) SCHEMATIC DIAGRAM ····· 4-37
• AI-20 (VIDEO, 2.6CH AUDIO, INTERFACE) PRINTED WIRING BOARD ····· 4-39

• FR-173 (IF COM, KEY BOARD JACK, FLD), LE-30 (DOLBY LED)
PRINTED WIRING BOARDS ····· 4-41
• FR-173 (IF COM)(1/2), LE-30 (DOLBY LED)
SCHEMATIC DIAGRAMS ····· 4-43
• FR-173 (KEY BOARD JACK, FLD)(2/2)
SCHEMATIC DIAGRAM ····· 4-45
• CH-98 (AUDIO)
PRINTED WIRING BOARD ····· 4-47
• CH-98 (AUDIO)
SCHEMATIC DIAGRAM ····· 4-49
• ER-12 (EURO AV)
PRINTED WIRING BOARD ····· 4-51
• ER-12 (EURO AV)
SCHEMATIC DIAGRAM ····· 4-53
• CV-34 (VIDEO OUT)
PRINTED WIRING BOARD ····· 4-55
• CV-34 (VIDEO OUT)
SCHEMATIC DIAGRAM ····· 4-57
• CK-97 (MOTOR DRIVER)
PRINTED WIRING BOARD ····· 4-59
• CK-97 (MOTOR DRIVER)
SCHEMATIC DIAGRAM ····· 4-61
• TS-151 (T SENSOR), DM-96 (DOOR MOTOR)
PRINTED WIRING BOARDS ····· 4-63
• TM-128 (TRAY MOTOR), DA-29 (DR SENSOR), LC-70 (LOADING/CAM MOTOR)
PRINTED WIRING BOARDS ····· 4-65
• TS-151 (T SENSOR), DM-96 (DOOR MOTOR), TM-128 (TRAY MOTOR), DA-29 (DR SENSOR), LC-70 (LOADING/CAM MOTOR)
SCHEMATIC DIAGRAMS ····· 4-67
• LS-55 (LD SENSOR)
PRINTED WIRING BOARD ····· 4-69
• LT-37 (LED), LT-38 (LED), CS-57 (CK SENSOR)
PRINTED WIRING BOARDS ····· 4-71
• LS-55 (LD SENSOR), LT-37 (LED), LT-38 (LED), CS-57 (CK SENSOR)
SCHEMATIC DIAGRAMS ····· 4-73
• FL-115 (DISPLAY CONTROL), SW-345 (EJECT SW)
PRINTED WIRING BOARDS ····· 4-75
• FL-115 (DISPLAY CONTROL), SW-345 (EJECT SW)
SCHEMATIC DIAGRAMS ····· 4-77
• POWER BLOCK (MPW1241)(US, CND MODEL), POWER BLOCK (MPW1141)(AEP, UK MODEL)
PRINTED WIRING BOARDS ····· 4-79
• POWER BLOCK (MPW1241)(US, CND MODEL), POWER BLOCK (MPW1141)(AEP, UK MODEL)
SCHEMATIC DIAGRAMS ····· 4-81

5. IC PIN FUNCTION DESCRIPTION

5-1. SYSTEM CONTROL PIN FUNCTION
MB91108PFV-G-BND (MB-94 BOARD IC102) ····· 5-1

6. TEST MODE

6-1. GENERAL DESCRIPTION ····· 6-1
6-2. STARTING TEST MODE ····· 6-1
6-3. SYSCON DIAGNOSIS ····· 6-1
6-4. DRIVE AUTO ADJUSTMENT ····· 6-5
6-5. DRIVE MANUAL OPERATION ····· 6-7
6-6. MECHA AGING ····· 6-11
6-7. EMERGENCY HISTORY ····· 6-11
6-8. VERSION INFORMATION ····· 6-12
6-9. VIDEO LEVEL ADJUSTMENT ····· 6-12
6-10. IF CON SELF DIAGNOSTIC FUNCTION ····· 6-13

7. ELECTRICAL ADJUSTMENT

7-1. POWER SUPPLY ADJUSTMENT ····· 7-1
7-2. ADJUSTMENT OF VIDEO SYSTEM ····· 7-2
7-3. CHECK OF AUDIO SYSTEM ····· 7-3

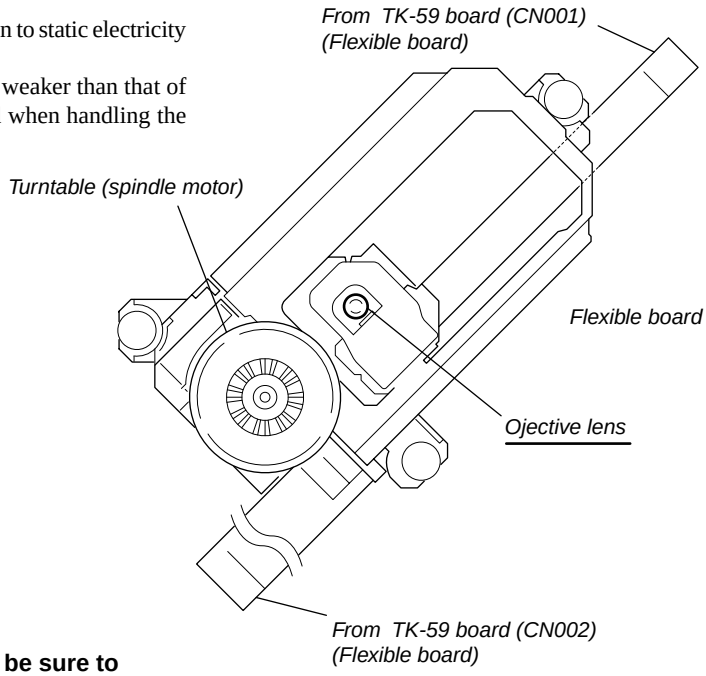
8. REPAIR PARTS LIST

8-1. EXPLODED VIEWS ····· 8-1
8-1-1. OVERALL SECTION ····· 8-1
8-1-2. FRONT PANEL SECTION ····· 8-2
8-1-3. CHASSIS SECTION ····· 8-3
8-1-4. MECHANISM SECTION ····· 8-4
8-2. ELECTRICAL PARTS LIST ····· 8-5

1. REPLACING OPTICAL PICK-UP

1-1. Handling

A red laser diode for DVD requires more attention to static electricity than general infrared laser diodes for CD.
Because its durability to static electricity is far weaker than that of infrared laser diodes, always use an earth band when handling the optical pick-up block as service parts.

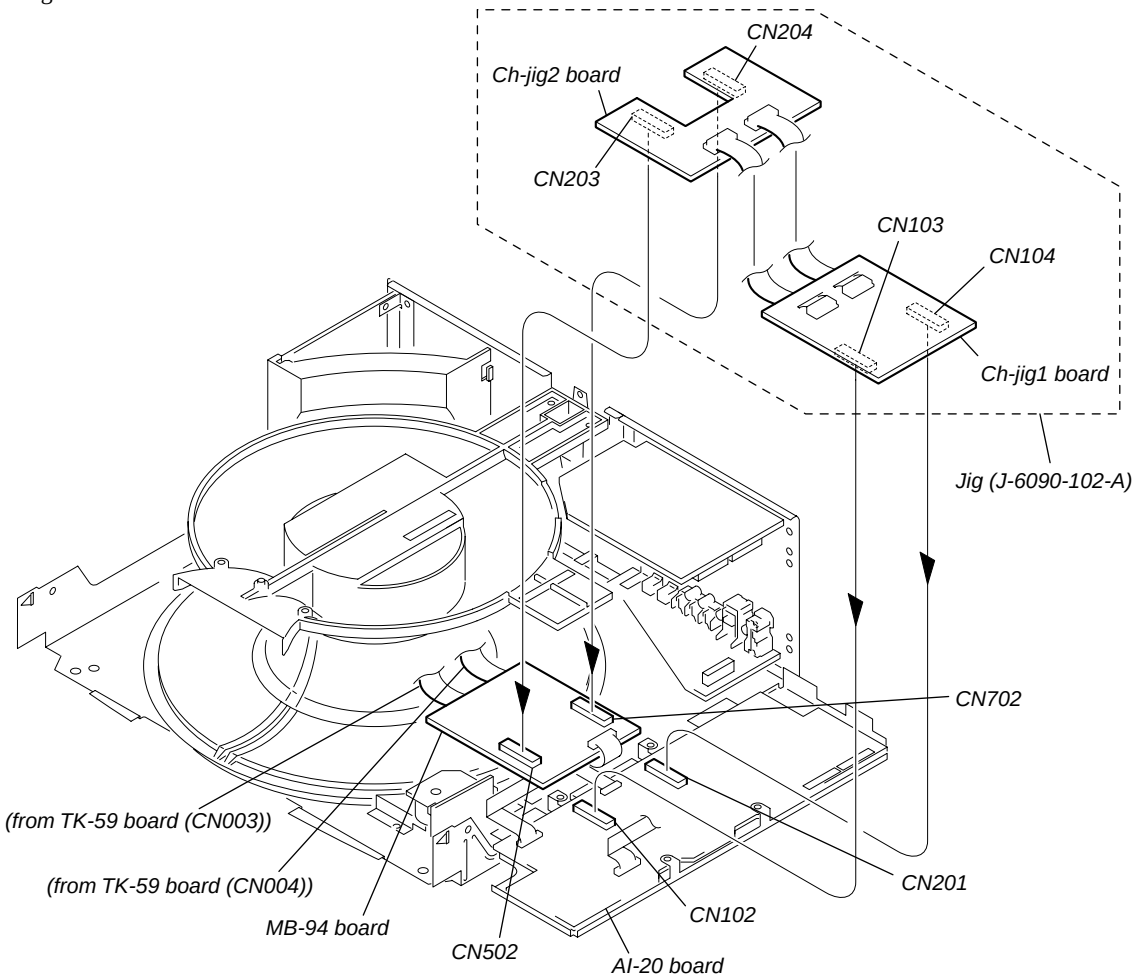


1-2. When the turntable is removed, be sure to perform the sensor adjustment.

Refer to “8. 300 CHG Mecha Con Menu 2” of Section “6. TEST MODE” (page 6-10) for the adjustment procedure.

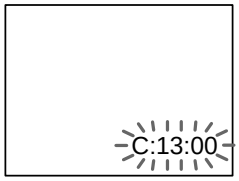
1-3. How to service MB-94 board

Establish the equipment setup as shown in illustration using the jig (J-6090-102-A) referring to Section “2-1. OVERALL” of DISASSEMBLY.



Self-diagnosis function

When the self-diagnosis function activates to prevent the player from malfunctioning, a five-character service number (combination of a letter and digits) flashes on the screen and on the front panel display. In this case, check the following table.



First three characters	Cause and/or Corrective Action
C13	• The disc is dirty. Clean the disc with a cleaning cloth. (page 6) • The disc is not facing the correct direction. Place the disc in the slot so that the playing side is facing left.
C31	• The front cover will not open or close all the way. Remove any objects that may be blocking the movement of the front cover.
Exx (xx is any number)	• To prevent a malfunction, the player has performed the self-diagnosis function. The front cover automatically open and the player enters standby mode. When you contact your Sony dealer or local authorized Sony service facility, remove all of the discs in the player and give the 5-character service number. (example: E:61:10)

SECTION 1
GENERAL

This section is extracted from instruction manual. (DVP-CX860 model)

About This Manual

Conventions

- Instructions in this manual describe the controls on the player. You can also use the controls on the remote if they have the same or similar names as those on the player.
- The icons on the right are used in this manual:

Icon	Meaning
	Indicates that you can use only the remote to do the task.
	Indicates tips and hints for making the task easier.
DVD	Indicates that the function is for DVD VIDEOs.
VIDEO CD	Indicates that the function is for VIDEO CDs.
CD	Indicates that the function is for Audio CDs.

This Player Can Play the Following Discs

	DVD VIDEOs		VIDEO CDs		Audio CDs	
Disc logo	DVD VIDEO		COMPACT disc DIGITAL VIDEO		COMPACT disc DIGITAL AUDIO	
Contents	Audio + Video		Audio + Video		Audio	
Disc size	12 cm	8 cm	12 cm	8 cm	12 cm	8 cm (CD single)
Play time	About 4 h (for single-sided DVD)/ about 8 h (for double-sided DVD)	About 80 min. (for single-sided DVD)/ about 160 min. (for double-sided DVD)	74 min.	20 min.	74 min.	20 min.

The "DVD VIDEO" logo is a trademark.

This player conforms to the NTSC color system. You cannot play discs recorded in other color systems such as PAL or SECAM.

Region code of DVDs you can play on this unit

Your DVD player has a region code printed on the back of the unit and will only play DVDs that are labeled with identical region codes.

Region code

DVDs labeled ALL will also play on this unit.

If you try to play any other DVD, the message "Playback prohibited by area limitations." will appear on the TV screen.

Depending on the DVD, no region code indication may be labeled even though playing the DVD is prohibited by area restrictions.

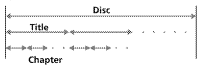
Note on playback operations of DVDs and VIDEO CDs

Some playback operations of DVDs and VIDEO CDs may be intentionally fixed by software producers. Since this player plays DVDs and VIDEO CDs according to the disc contents the software producers designed, some playback features may not be available. Also refer to the instructions supplied with the DVDs or VIDEO CDs.

Terms for discs

- **Title**
  The longest section of a picture or music feature on a DVD, the movie, etc. in video software, or the name of an album in audio software.
- **Chapter**
  Sections of a picture or a music feature that are smaller than titles. A title is composed of several chapters. Each chapter is assigned a chapter number enabling you to locate the chapter you want. Depending on the disc, no chapters may be recorded.
- **Track**
  Sections of a picture or a music feature on a VIDEO CD or a CD. Each track is assigned a track number enabling you to locate the track you want.

DVD structure



VIDEO CD or CD structure

- **Index (CD) / Video Index (VIDEO CD)**
  A number that divides a track into sections to easily locate the point you want on a VIDEO CD or a CD. Depending on the disc, no indexes may be recorded.
- **Scene**
  On a VIDEO CD with PBC (playback control) functions, the menu screens, moving pictures and still pictures are divided into sections called "scenes." Each scene is assigned a scene number enabling you to locate the scene you want.

Note on PBC (Playback Control) (VIDEO CDs)

This player conforms to Ver. 1.1 and Ver. 2.0 of VIDEO CD standards. You can enjoy two kinds of playback according to the disc type.

Disc type	You can
VIDEO CDs without PBC functions (Ver. 1.1 discs)	Enjoy video playback (moving pictures) as well as music.
VIDEO CDs with PBC functions (Ver. 2.0 discs)	Play interactive software using menu screens displayed on the TV screen (PBC Playback), in addition to the video playback functions of Ver. 1.1 discs. Moreover, you can play high-resolution still pictures if they are included on the disc.

Discs that the player cannot play

The player cannot play discs other than the ones listed in the table on page 4. CD-Rs, CD-ROMs including PHOTO CDs, data sections in CD-EXTRAs, DVD-ROMs, DVD-audio, HD (high density) layer of Super Audio CD etc., cannot be played.

When playing DTS*-encoded CDs, excessive noise will be heard from the analog stereo outputs. To avoid possible damage to the audio system, the consumer should take proper precautions when the analog stereo outputs of the DVD player are connected to an amplification system. To enjoy DTS Digital Surround™ playback, an external 5.1-channel DTS Digital Surround™ decoder system must be connected to the digital output of the DVD player.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

* "DTS," "DTS Digital Surround" and "DTS Digital Out" are trademarks of Digital Theater Systems, Inc.

Precautions

On safety

- Caution – The use of optical instruments with this product will increase eye hazard.
- Should any solid object or liquid fall into the cabinet, unplug the player and have it checked by qualified personnel before operating it any further.

On power sources

- The player is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the player itself has been turned off.
- If you are not going to use the player for a long time, be sure to disconnect the player from the wall outlet. To disconnect the AC power cord (mains lead), grasp the plug itself; never pull the cord.
- Should the AC power cord (mains lead) need to be changed, have it done at a qualified service shop only.

On placement

- Place the player in a location with adequate ventilation to prevent heat build-up in the player.
- Do not place the player on a soft surface such as a rug that might block the ventilation holes on the bottom.
- Do not place the player in a location near heat sources, or in a place subject to direct sunlight, excessive dust or mechanical shock.

On operation

- If the player is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lenses inside the player. Should this occur, the player may not operate properly. In this case, remove the disc and leave the player turned on for about half an hour until the moisture evaporates.
- When you move the player, take out any discs. If you don't, the discs or the player may be damaged.

On adjusting volume

- Do not turn up the volume while listening to a section with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level section is played.

On cleaning

- Clean the cabinet, panel and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

If you have any questions or problems concerning your player, please consult your nearest Sony dealer.

IMPORTANT NOTICE

Caution: The enclosed DVD player is capable of holding a still video image or on-screen display image on your television screen indefinitely. If you leave the still video image or on-screen display image displayed on your TV for an extended period of time you risk permanent damage to your television screen. Projection televisions are especially susceptible to this.

Notes About the Discs

On handling discs

- To keep the disc clean, handle the disc by its edge. Do not touch the surface.
- Do not stick paper or tape on the disc.
  If there is glue (or a similar substance) on the disc, remove the glue completely before using the disc.

- Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a car parked in direct sunlight as the temperature may rise considerably inside the car.
- After playing, store the disc in its case.

On cleaning

- Before playing, clean the disc with a cleaning cloth. Wipe the disc from the center out.

- Do not use solvents such as benzine, thinner, commercially available cleaners or anti-static spray intended for vinyl LPs.

On novelty discs

- Do not use irregularly shaped CDs such as heart- or star-shaped CDs as they may cause the player to malfunction.

Getting Started

This section describes how to hook up the CD/DVD player to a TV (with audio/video input jacks) and/or an AV receiver (amplifier). You cannot connect this player to a TV which does not have a video input connector. Be sure to turn off the power of each component before making the connections.

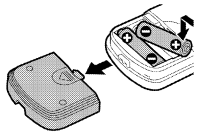
Unpacking

Check that you have the following items:

- Audio/video/S-link (control S) connecting cord (1)
- S video cord (1)
- Remote commander (remote) RMT-D123A (1)
- Size AA (R6) batteries (2)

Inserting batteries into the remote

You can control the player using the supplied remote. Insert two Size AA (R6) batteries by matching the + and – ends on the batteries to the markings inside the compartment. When using the remote, point it at the remote sensor ■ on the player.



You can control TVs and AV receivers (amplifiers) using the supplied remote

See page 72.

Notes

- Do not leave the remote in an extremely hot or humid place.
- Do not drop any foreign object into the remote casing, particularly when replacing the batteries.
- Do not expose the remote sensor to direct sunlight or lighting apparatuses. Doing so may cause a malfunction.
- If you do not use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.

Transporting the player

Before transporting the player, follow the procedure below to return the internal mechanisms to their original positions.

1 Remove all the discs from the disc slots.
Failure to remove the discs may cause damage to the player.

2 Press OPEN/CLOSE to close the front cover.
Make sure that "NO DISC" appears on the front panel display.

3 Wait for 10 seconds, then press I/⏻ on the remote, followed by ⏻ on the player.
This will safely turn off the player.

TV Hookups

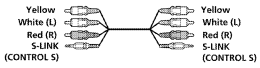
This connection is for listening to the sound through TV speakers (L: left, R: right). Refer to the instructions supplied with the component to be connected.

You can enjoy surround sound using your TV's built-in speakers

You can use 3D sound imaging to create virtual rear speakers from the sound of built-in TV speakers without using actual rear speakers (VES TV: Virtual Enhanced Surround TV). For details, see page 47.

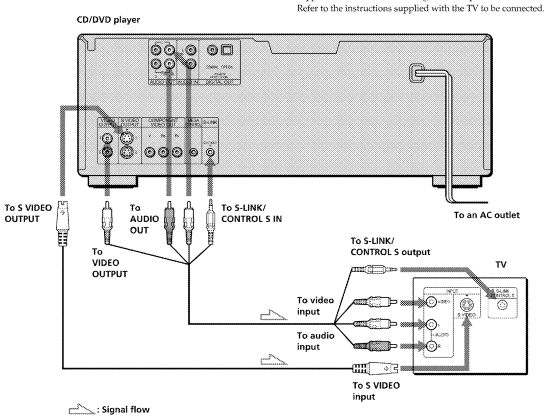
Required cords

Audio/video/S-link connecting cord (supplied) (1)



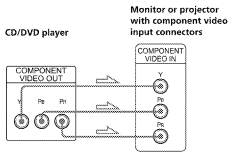
S video cord (supplied) (1)

When connecting the cords, be sure to match the color-coded cord to the appropriate jacks on the components: Yellow (video) to Yellow, Red (right) to Red and White (left) to White. Be sure to make connections firmly to avoid hum and noise.
If your TV has an S-LINK (CONTROL S) connector, you can control the CD/DVD player from the TV. Connect the TV via the S-LINK/CONTROL S IN connector.
If your TV has an S video input connector, connect the component via the S VIDEO OUTPUT connector using the supplied S video cord. You will get a better picture.
Refer to the instructions supplied with the TV to be connected.



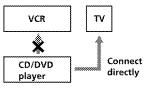
If you connect the player to a monitor or projector having component video input connectors that conform to output signals from the COMPONENT VIDEO OUT (Y, PB, PR) connectors on the player

Connect the component via the COMPONENT VIDEO OUT connectors using three video connecting cords (not supplied) of the same kind. You will get a better picture.



Notes

- Refer to the instructions supplied with the component to be connected.
- Do not connect this player to a video deck. If you do, noise may appear in the picture.

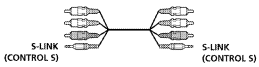


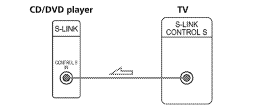
- Depending on the TV or receiver (amplifier), sound distortion may occur because the audio output level is high. In this case, set "AUDIO ATT" in "AUDIO SETUP" to "ON" in the setup display. For details, see page 70.

If your TV has an S-link (control S) connector

You can control the player from the TV.
Connect the TV via the S-LINK/CONTROL S IN connector using the S-link (control S) cord (supplied). Refer to the instructions supplied with the TV to be connected.

Audio/video/S-link connecting cord (supplied) (1)





Setups for the player

Some setup adjustments are necessary for the player depending on the TV or other components to be connected.
Use the setup display to change the various settings.
For details on using the setup display, see page 60.

- **To connect the player to a normal TV**
  In the setup display, set "TV TYPE" in "SCREEN SETUP" to "4:3 LETTER BOX" (default setting) or "4:3 PAN SCAN." For details, see page 64.
- **To connect the player to a TV having the WIDE MODE function**
  In the setup display, set "TV TYPE" in "SCREEN SETUP" to "16:9/4:3 WIDE MODE." For details, see page 64.
- **To connect the player to a wide-screen TV**
  In the setup display, set "TV TYPE" in "SCREEN SETUP" to "16:9/4:3 WIDE MODE." For details, see page 64.

Receiver (Amplifier) Hookups

This connection is for listening to the sound through speakers connected to a receiver lacking a built-in DTS or Dolby* Digital decoder. Refer as well to the instructions supplied with the component to be connected.

* Manufactured under license from Dolby Laboratories.
"Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories.
Confidential unpublished works. ©1992-1997 Dolby Laboratories. All rights reserved.

Required cords

Audio connecting cord (not supplied) (1)

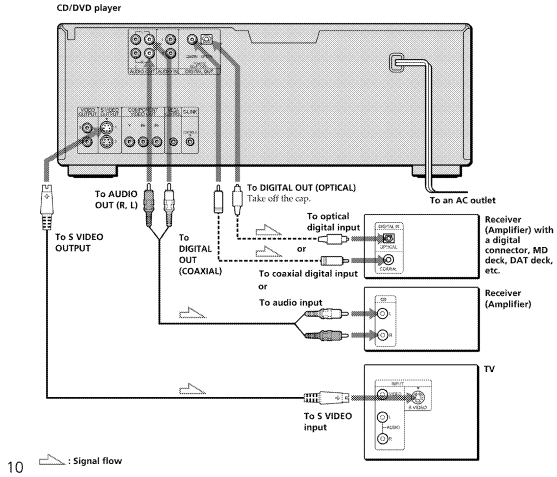
S video cord (supplied) (1)

When connecting the cords, be sure to match the color-coded cord to the appropriate jacks on the components: Red (right) to Red and White (left) to White. Be sure to make connections firmly to avoid hum and noise.
If you have a digital component such as a receiver (amplifier) with a digital connector, DAT or MD, connect the component via the DIGITAL OUT OPTICAL or COAXIAL connector using an optical or coaxial digital connecting cord (not supplied).

Optical digital connecting cord (not supplied) (1)

Coaxial digital connecting cord (not supplied) (1)

Do not connect the power cord to a switched AC outlet such as the AC outlet on a receiver (amplifier). Doing so may cause the Playback Memory, Bookmark, Disc Explorer and menu settings to be cancelled when you turn off the receiver.



You can enjoy surround sounds even if you connect front speakers only

You can use 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers (VES: Virtual Enhanced Surround). For details, see page 47.

If you have a digital component with a built-in DTS or Dolby Digital decoder

You can enjoy multichannel surround sound by connecting the component via the DIGITAL OUT OPTICAL or COAXIAL connector using an optical or coaxial digital connecting cord (not supplied). For details on hookups and settings, see page 12.

Notes

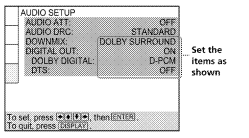
- You cannot enjoy a picture with an S video signal if your TV does not conform to the S video signal. When your TV does not have an S VIDEO input, connect the component via the VIDEO INPUT connector using the audio/video connecting cord (supplied) instead of the S video cord. For details, see page 8.
  Refer to the instructions supplied with your TV.
- You cannot make digital audio recordings of discs recorded in multichannel surround format directly using an MD deck or DAT deck.
- When you connect the component via the DIGITAL OUT OPTICAL or COAXIAL connector, set Virtual Enhanced Surround (VES) to "OFF." Otherwise, the player will not output signals from the DIGITAL OUT OPTICAL or COAXIAL connector, if you set "DOLBY DIGITAL" in "AUDIO SETUP" to "D-PCM."

When you have made the connections using an optical or coaxial digital connecting cord, do not set "DOLBY DIGITAL" to "DOLBY DIGITAL" and "DTS" to "ON." If you do, a loud noise will suddenly come out from the speakers, affecting your ears or causing the speakers to be damaged.

Setups for the player

Some setup adjustments are necessary for the player depending on the components to be connected.
Use the setup display to change the various settings.
For details on using the setup display, see page 60.

- **To listen to the sound through speakers connected to a receiver (amplifier) which has a digital connector and lacks a built-in DTS or Dolby Digital decoder, or to output the sound to a digital component such as a DAT or MD deck**
  Set the "AUDIO SETUP" items in the setup display (page 70) as shown in the illustration below. These are the default settings.



Set "VES" to "OFF" in the Control Menu display (page 47). When you select any VES mode other than "OFF," no sound will come from the speakers.

Note

When you output the signals which do not reproduce the Dolby Surround (Pro Logic) effect from the DIGITAL OUT OPTICAL or COAXIAL connector, set "DOWNMIX" to "NORMAL" in "AUDIO SETUP" in the setup display (page 70).

5.1 Channel Surround Hookups

With DVDs which contain DTS or Dolby Digital sound, you can enjoy the surround sound while producing the effect of being in a movie theater or a concert hall using a digital component with a built-in DTS or Dolby Digital decoder (not supplied). The player outputs the surround sound signals from the DIGITAL OUT OPTICAL and COAXIAL connectors.
Using a receiver (amplifier) having the OPTICAL or COAXIAL connector and 6 speakers, you can enjoy even greater real audio presence in the comfort of your own home.

Required cords

Optical digital connecting cord* (not supplied) (1)

Coaxial digital connecting cord* (not supplied) (1)

S video cord (supplied) (1)

* Connect the component via the DIGITAL OUT OPTICAL or COAXIAL connector using an optical or coaxial digital connecting cord (not supplied). You do not need to connect both of these cords. See the figure on the next page.

Notes

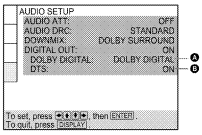
- Do not connect the power cord to an AC outlet or press the POWER switch before completing all connections.
- Refer to the instructions supplied with the component to be connected.
- The cord connectors should be fully inserted into the jacks. A loose connection may cause hum and noise.

Do not connect the power cord to a switched AC outlet such as the AC outlet on a receiver (amplifier). Doing so may cause the Playback Memory, Bookmark, Disc Explorer and menu settings to be cancelled when you turn off the receiver.

Setups for the player

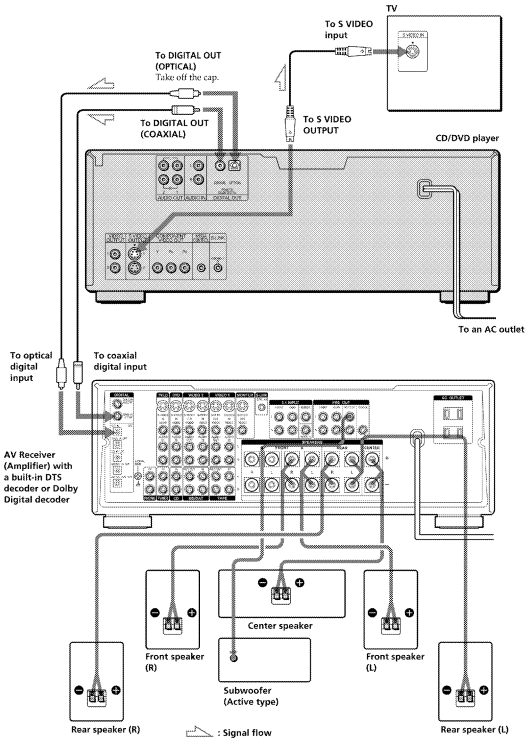
Some setup adjustments are necessary for the player depending on the components to be connected.
Use the setup display to change the various settings.
For details on using the setup display, see page 60.

- **When you connect an audio component with a built-in Dolby Digital decoder A**
  Set "DIGITAL OUT" in "AUDIO SETUP" to "ON" and then set "DOLBY DIGITAL" to "DOLBY DIGITAL" in the setup display. (page 70)
- **When you connect an audio component with a built-in DTS decoder B**
  Set "DIGITAL OUT" in "AUDIO SETUP" to "ON" and then set "DTS" to "ON" in the setup display. (page 70)



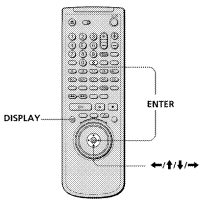
Notes

- **When you do not connect an audio component with a built-in Dolby Digital decoder, do not set "DOLBY DIGITAL" to "DOLBY DIGITAL."**
- **When you do not connect an audio component with a built-in DTS decoder, do not set "DTS" to "ON."**

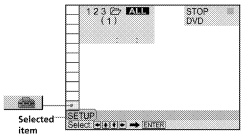


Selecting the Language for the On-Screen Display

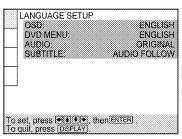
You can select the language for the setup display, the Control Menu display or the messages displayed on the screen. The default setting is "ENGLISH."



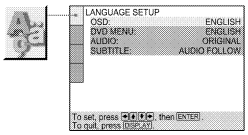
1 When the player is in stop mode, press DISPLAY and select "SETUP" using ↑/↓.
The on-screen menu items are different depending on whether there is a disc in the player or not.



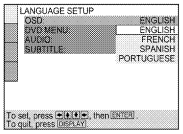
2 Press ENTER.
The setup display appears on the TV screen.



3 Select "LANGUAGE SETUP" using ↑/↓, and then press ENTER.



4 Select "OSD" using ↑/↓, then press → or ENTER.
The languages you can select are displayed.



5 Select the desired language using ↑/↓, then press ENTER.

CHOIX DE LA LANGUE
ECRANS: FRANCAIS
MENU DVD: ANGLAIS
AUDIO: ORIGINAL
SOUS-TITRE: IDEM AUDIO
Pour régler, appuyez sur ←/↑/↓/→, puis sur ENTER. Pour quitter, appuyez sur DISPLAY.

6 Press DISPLAY.
The setup display disappears.

7 Press DISPLAY repeatedly to turn off the on-screen menu.

To return to the previous screen
Press ↩RETURN.

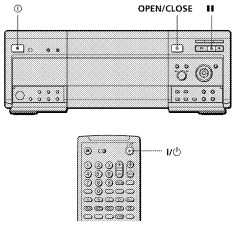
To quit while making a selection
Press DISPLAY.

Note
The languages you can select are the ones displayed in Step 4.
For details, see page 63.

Operation Sound Effects (Sound Feedback)

The player beeps when the following operations are performed.
The default setting of the Sound Feedback function is set to off.

Operation	Operation sound
Power is turned on	One beep
Power is turned off	Two beeps
▷ is pressed	One beep
❚❚ is pressed	Two beeps
Playback is stopped	One long beep
Operation is not possible	Three beeps



1 Press ⏻ on the player, then press I/⏻ on the remote.
The power indicator lights up in green.

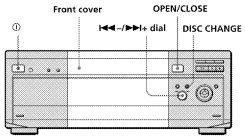
2 Press OPEN/CLOSE to open the front cover.

3 Press and hold ❚❚ on the player for more than three seconds.
You will hear one beep and the Sound Feedback function is turned on.

To turn off the Sound Feedback Function
When the front cover is open, press and hold ❚❚ on the player for more than three seconds. You will hear two beeps and the Sound Feedback function is turned off.

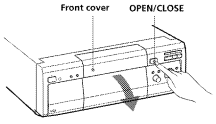
Inserting Discs

You can insert up to 301 discs into the disc slots (including the EASY PLAY slot) in this player.



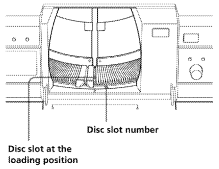
1 **Press ⏻ to turn on the player.**

2 **Press OPEN/CLOSE.**
The front cover opens.



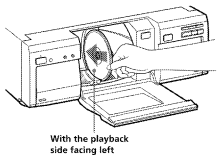
3 **Press DISC CHANGE to turn the indicator on.**

4 **Turn the I◀◀ –/▶▶I+ dial until you find the disc slot where you want to insert a disc, while checking the disc slot number indicated on the front panel display or by the slot.**



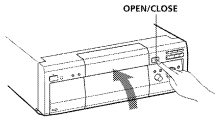
5 **Insert a disc with the playback side facing left.**

Notes
- Make sure you have inserted the disc into each slot at a right angle to the rotary table. If the disc is not put in straight, it may damage the player or the disc.
- Gently place the disc all the way into the slot and do not release the disc until it is completely seated.



6 **Repeat Steps 4 and 5 to insert more discs.**

7 **Close the front cover by pressing OPEN/CLOSE.**



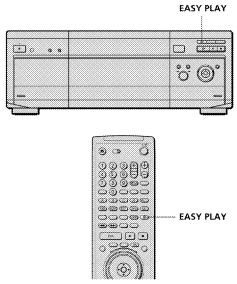
The rotary table turns and the disc slot at the loading position is set to the playing position.

You can select a disc slot number by skipping by 10 slots
When you select the disc slot number in Step 4, press DISC SKIP +/– on the remote. Ten disc slots each before and after from the current disc slot number will be skipped.

Notes
- When you insert an 8 cm (3-inch) CD, be sure to attach a Sony CD-single adaptor (not supplied) to the disc and only use the EASY PLAY slot.
  Do not insert an empty 8 cm (3-inch) CD adaptor. It may damage the player.
- Do not attach anything such as stickers or sleeves to discs. It may damage the player or the disc.
- Do not turn the turntable by hand.
- Do not reach inside of the turntable compartment. Always follow the correct steps for inserting and removing discs.
- When transporting the player, remove all discs from the player. Failure to remove the discs may cause damage to the player.
- When closing the front cover, be careful not to let anything get caught between the door and the player.
- Do not insert anything other than a DVD, Audio CD or Video CD into the player.

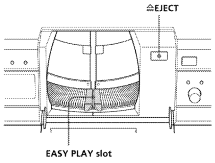
Using the EASY PLAY slot

The EASY PLAY slot can be used separately from other slots for the purpose of inserting a disc you want to play immediately.
The EASY PLAY disc is numbered 301. When you use the Program Play or Disc Explorer function, or Search for a disc by slot number, enter the disc in the EASY PLAY slot as disc number 301.



To insert a disc to the EASY PLAY slot

1 **Press EASY PLAY.**
The EASY PLAY indicator lights up on the player and the EASY PLAY slot comes to the loading position and the front cover opens.



2 **Insert the disc.**

3 **Press EASY PLAY again.**
The front cover closes and playback of the EASY PLAY disc starts.

If you press EASY PLAY when there is a disc in the EASY PLAY slot
The player loads the disc information and starts playback of the disc.

"EZ" appears in the front panel display when the EASY PLAY slot is being used.

To remove the disc from the EASY PLAY slot

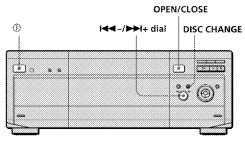
1 **Press OPEN/CLOSE to open the front cover.**
The front cover opens.

2 **Press EASY PLAY.**
The EASY PLAY indicator lights up on the player and the EASY PLAY slot comes to the loading position.

3 **Press ⏏EJECT on the player.**
The loading guide rises so that you can remove the disc easily.

4 **Remove the disc.**

Removing discs



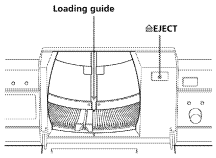
1 **Press ⏻ to turn on the player.**

2 **Press OPEN/CLOSE.**

3 **Press DISC CHANGE to turn the indicator on.**

4 **Turn the I◀◀ –/▶▶I+ dial until you find the disc you want to remove, while checking the disc slot number indicated on the front panel display or by the slot.**

5 **Press ⏏EJECT on the player.**
The loading guide rises so that you can remove the disc easily.



6 **Remove the disc.**

7 **Repeat Steps 4 to 6 to remove other discs.**

8 **Close the front cover by pressing OPEN/CLOSE.**

If you replace a disc in Step 6
The loading guide automatically goes down after few seconds. If you want to place another disc in the same slot, wait until the loading guide goes down before inserting the disc.

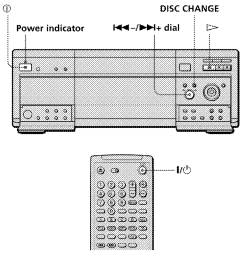
Note
The loading guide automatically goes down when you make another operation.

Playing Discs

This chapter describes how to play a DVD/CD/VIDEO CD.

Playing Discs DVD VIDEO CD

Depending on the DVD or VIDEO CD, some operations may be different or restricted.
Refer to the instructions supplied with your disc.



1 **Turn on your TV**
Turn on the TV and select the video input so that you can view the pictures from this player.

When using a receiver (amplifier)
Turn on the receiver (amplifier) and select the appropriate position so that you can listen to the sound from this player.

2 **Press ⏻ to place the player in standby mode.**
The player enters standby mode and the power indicator lights up in red.

3 **Press I/⏻ on the remote to turn on the player**
The power indicator lights up in green.

4 **Press ▷.**
The player starts playback. Adjust the volume on the TV or the receiver (amplifier).

To change the disc
Press DISC CHANGE to turn the indicator on. Then turn the I◀◀ –/▶▶I+ dial until the desired disc number appears on the front panel display.
Press the I◀◀ –/▶▶I+ dial to start playback.

After following Step 4

■When playing a DVD
A DVD menu or title menu may appear on the TV screen (see page 24).

■When playing a VIDEO CD
Depending on the VIDEO CD, a menu may appear on the TV screen. You can play the disc interactively by following the instructions on the menu. (PBC Playback, see page 25.)

To turn on the player

Press ⏻ on the player. The player enters standby mode and the power indicator lights up in red.
Then press I/⏻ on the remote. The player turns on and the power indicator lights up in green. In standby mode, the player also turns on by pressing ▷.

To turn off the player

Press I/⏻ on the remote. The player enters standby mode and the power indicator lights up in red.
To disconnect the power of the player, press ⏻ on the player.

Notes on playing DTS sound tracks on a CD

- Do not play DTS sound tracks without first connecting the player to an audio component having a built-in DTS decoder. The player outputs the DTS signal via the DIGITAL OUT OPTICAL and COAXIAL connectors even if "DTS" in "AUDIO SETUP" is set to "OFF" in the setup display, and may affect your ears or cause your speakers to be damaged.
- Set the sound to "STEREO" when you play DTS sound tracks on a CD. (See "Changing the Sound" on page 43.) If you set the sound to "1/L" or "2/R," no sound will come from the DIGITAL OUT OPTICAL and COAXIAL connectors.
- If you play a CD with a DTS sound track, a loud noise may come out from the AUDIO OUT connectors, affecting your ears or causing the speakers to be damaged.

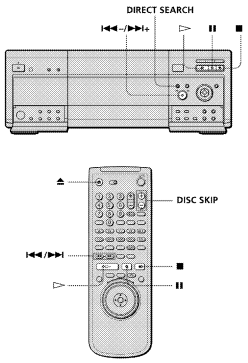
Notes on playing DTS sound tracks on a DVD

- The signals of the DTS sound tracks are output from the DIGITAL OUT OPTICAL and COAXIAL connectors only. No sound will be output from the AUDIO OUT connectors.
- If the player is connected to an audio component lacking a built-in DTS decoder, do not set "DTS" in "DIGITAL OUT" to "ON" in the setup display. Otherwise, when you play the DTS sound track, a loud noise will come out from the speakers, affecting your ears or causing the speakers to be damaged.
- When you set "DTS" in "AUDIO SETUP" to "OFF," no sound will come out from the DIGITAL OUT OPTICAL and COAXIAL connectors even if you play DTS sound tracks on DVDs.

Notes

- If you leave the player or the remote in pause or stop mode for 15 minutes, the screen saver image appears automatically. It will also appear if you play back a CD for more than 15 minutes. To make the screen saver image go away, press ▷. (If you want to set the screen saver function to off, see page 64.)
- While playing a disc, do not turn off the player by pressing ⏻. Doing so may cancel the settings of the menu. When you turn off the player, press ■ first to stop playback and then press I/⏻ on the remote. After the power indicator lights up in red and the player enters standby mode, press ⏻ on the player.

Additional operations

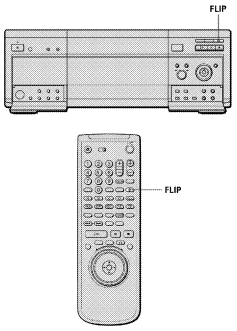


To	Operation
Select a disc	*On the player:* Press DISC CHANGE to turn the indicator on. Then turn the I◀◀ –/▶▶I + dial until the desired disc number appears on the front panel display. Press the I◀◀ –/▶▶I + dial to start playback
Skip empty disc slots while selecting a disc	Press DISC SKIP +/– on the remote
Stop	Press ■
Pause	Press II
Resume play after pause	Press II or ▷
Go to the next chapter, track or scene in continuous play mode	*On the player:* Press DIRECT SEARCH to turn it on and turn the I◀◀ –/▶▶I + dial clockwise. *On the remote:* Press ▶▶I
Go back to the preceding chapter, track or scene in continuous play mode	*On the player:* Press DIRECT SEARCH to turn it on and turn the I◀◀ –/▶▶I + dial counterclockwise. *On the remote:* Press I◀◀
Stop play and remove the disc	*On the player:* Press OPEN/CLOSE, followed by ⏏EJECT. *On the remote:* Press ⏏, followed by ⏏EJECT on the player

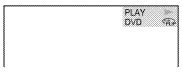
You can play discs in various modes such as Program Play using the on-screen menu (Control Menu). For Control Menu operations, see page 37.

Playing Side B (FLIP) DVD

You can play side B without ejecting the disc to turn it over.
"Side B" is the side facing right when you insert the disc into the slot.



While playing a disc, pess FLIP.
While side B is being played, ⟲FLIP appears on the TV.



To return to side A
Press FLIP again.

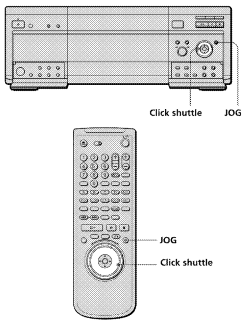
Notes

- Playback does not continue from side A to side B.
- Side B contents are not played even if you select the ALL DISCS mode.

- Program Play, Repeat Play, Bookmark, Disc Explorer, Custom Parental Control or Shuffle Play cannot be set with side B contents.
- Playback Memory settings are not effective for side B.
- When you flip the disc, Program Play, Repeat Play, and Shuffle Play settings for side A are cancelled.

Playing at Various Speeds/Frame by Frame
DVD VIDEO CD CD

Using the click shuttle and the JOG button/indicator, you can play back a DVD/CD/VIDEO CD at various speeds or frame by frame. Each time you press JOG, it changes between shuttle mode and jog mode.



To change the playback speed (Shuttle mode)

Turn the click shuttle. The playback speed changes depending on the turning direction and angle as follows:

When you play back a DVD

During playback

FF2▶▶ Fast forward (about 30 times the normal speed)
↕
FF1▶▶ Fast forward (about 10 times the normal speed)
↕
×2▶ (about twice the normal speed)
↕
PLAY▶ (normal speed)
↕
×2◀ (about twice the normal speed)
↕
FR1◀◀ Fast rewind (about 10 times the normal speed)
↕
FR2◀◀ Fast rewind (about 30 times the normal speed)

If you turn the click shuttle quickly, the playback speed goes to FF2▶▶ or FR2◀◀ at once.

During pause

SLOW1▮▶ Slow (playback direction)
↕
SLOW2▮▶ Slow (playback direction – slower than "SLOW1▮▶")
↕
PAUSE▮▮ Pause
↕
SLOW2 ◀▮ Slow (opposite direction – slower than "SLOW1 ◀▮")
↕
SLOW1 ◀▮ Slow (opposite direction)

When you play back a CD/VIDEO CD

During playback

FF2▶▶ Fast forward (faster than "FF1▶▶")
↕
FF1▶▶ Fast forward
↕
×2▶ (about twice the normal speed)*
↕
PLAY▶ (normal speed)
↕
FR1◀◀ Fast rewind
↕
FR2◀◀ Fast rewind (faster than "FR1◀◀")

* CD Only

If you turn the click shuttle quickly, the playback speed goes to FF2▶▶ or FR2◀◀ at once.

During pause (VIDEO CD only)

SLOW1▮▶ Slow (playback direction)
↕
SLOW2▮▶ Slow (playback direction – slower than "SLOW1▮▶")
↕
PAUSE▮▮ Pause

To return to continuous play
Press ▷.

Note
Depending on the DVD/VIDEO CD, you may not be able to do some of the operations described.

To play the disc frame by frame (Jog mode) DVD VIDEO CD

1 Press JOG.
JOG lights up during jog mode. When you press JOG on the player, it pauses.

2 Turn the click shuttle.
Depending on the turning speed, playback goes to frame-by-frame playback in the direction that the click shuttle is turned. If you turn the click shuttle at a constant speed for a while, the playback speed goes to slow or normal.

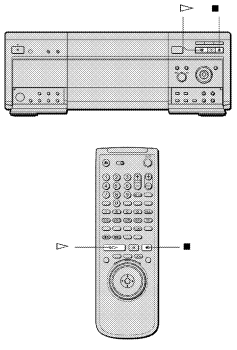
To return to Continuous Play
Press ▷.

Notes

- The JOG indicator shows the mode of the corresponding click shuttle. For example, when the JOG indicator on the remote is not lit, the remote click shuttle will remain in the shuttle mode even if the indicator on the player is lit.
- If you don't operate the click shuttle for about 20 seconds after pressing JOG, it returns to shuttle mode. On the player, it stays in jog mode.

Resuming Playback from the Point Where You Stopped the Disc (Resume Play) DVD VIDEO CD CD

The player remembers the point where you stopped the disc, and when "RESUME" appears on the front panel display, you can resume playback from that point. Resume Play will work even if the player enters standby mode by pressing I/⏻ on the remote.



1 While playing a disc, pess ■ to stop playback.
"RESUME" appears on the front panel display and "Disc will restart from current point. To start from beginning, press STOP again." appears on the TV screen.
If "RESUME" does not appear, Resume Play is not available.

2 Press ▷.
The player starts playback from the point where you stopped the disc in Step 1.

To play from the beginning of the disc
When the playing time appears on the front panel display before you start playing, press ■ to reset the playing time, then press ▷.

Resuming Playback from the Point Where You Stopped the Disc (Resume Play)

Notes

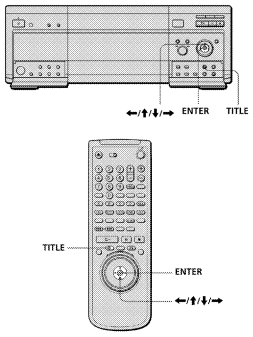
- Resume Play may not be available on some DVDs.
- Resume Play is not available in Shuffle or Program Play mode.
- Depending on where you stopped the disc, the player may resume playback from a different point.
- The point where you stopped playing is cleared when:
  - you open the front cover
  - you turn the power off by pressing ⏻ on the player
  - you change the play mode
  - you start playback after selecting a disc, title, chapter or track
  - you change the settings in the setup display
  - you load disc information by pressing LOAD
  - you press MEGA CONTROL (MEGA on the remote)
  - you use the DISC EXPLORER function

Using the DVD's Menu DVD

Some DVDs have a title menu or a DVD menu that is provided with DVDs only.

Using the title menu

A DVD is divided into long sections of a picture or a music feature called "titles." When you play a DVD which contains several titles, you can select the title you want using the title menu.



1 Press TITLE.
The title menu appears on the TV screen. The contents of the menu vary from disc to disc.

2 Press ←/↑/↓/→ to select the title you want to play.
Depending on the disc, you can use the number buttons to select the title.

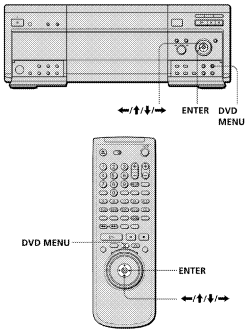
3 Press ENTER.
The player starts playing the selected title.

Notes

- On some DVDs, you may not be able to select the title.
- On some DVDs, a "title menu" may simply be called a "menu" or "title" in the instructions supplied with the disc. "Press ENTER." may also be expressed as "Press SELECT."

Using the DVD menu

Some DVDs allow you to select the disc contents using a menu. When you play these DVDs, you can select the language for the subtitles, the language for the sound, etc., using the DVD menu.



1 Press DVD MENU.
The DVD menu appears on the TV screen. The contents of the menu vary from disc to disc.

2 Press ←/↑/↓/→ to select the item you want to change.
Depending on the disc, you can use the number buttons to select the item.

3 To change other items, repeat Step 2.

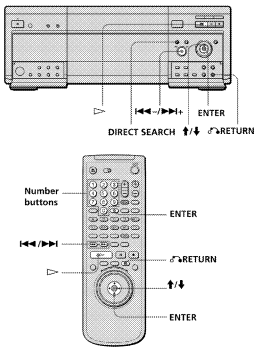
4 Press ENTER.

If you want to select the language for the DVD menu
Change the setting using "DVD MENU:" in "LANGUAGE SETUP" in the setup display. For details, see page 63.

Note
Depending on the DVD, a "DVD menu" may simply be called a "menu" in the instructions supplied with the disc.

Playing VIDEO CDs with PBC Functions (PBC Playback) VIDEO CD

When playing VIDEO CDs with PBC (Play Back Control) functions (Ver. 2.0 discs), you can enjoy simple interactive operations, search functions, and other such operations. PBC Playback allows you to play VIDEO CDs interactively by following the menu on the TV screen. On this player, you can use the number buttons, ENTER, ⏮, ⏭, ↑/↓ and ↶RETURN during PBC Playback. When you use the ⏮–/⏭+ dial on the player, press DIRECT SEARCH to turn it on.



1 Start playing a VIDEO CD with PBC functions by following Steps 1 to 4 in "Playing Discs" on page 19.

2 Select the item number you want.
Press ↑/↓ to select the item number.
You can also select the item number with the number buttons on the remote.

3 Press ENTER.

Playing VIDEO CDs with PBC Functions (PBC Playback)

4 Follow the instructions in the menu for interactive operations.
Refer to the instructions supplied with the disc, as the operating procedure may differ according to the VIDEO CD.

To go back to the menu
Press ↶RETURN, ⏮, or ⏭.

To cancel PBC playback of a VIDEO CD with PBC functions and play the disc in continuous play mode
There are two ways.

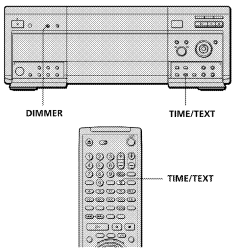
- Before you start playing, select the track you want using ⏮ or ⏭, then press ENTER or ▷.
- Before you start playing, select the track number using the number buttons on the remote, then press ENTER or ▷. "Play without PBC" appears on the TV screen and the player starts continuous play. You cannot play still pictures such as a menu.

To return to PBC playback, press ■ twice then press ▷.

Note
Depending on the VIDEO CD, "Press ENTER" in Step 3 may be expressed as "Press SELECT" in the instructions supplied with the disc. In this case, press ▷.

Using the Front Panel Display DVD VIDEO CD CD

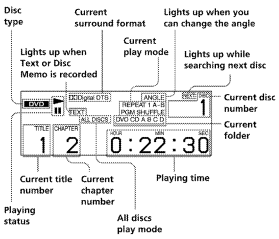
You can check information about the disc, such as the total number of titles or tracks or remaining time, using the front panel display.



To change the brightness of the front panel display
Press DIMMER on the player. Each time you press the button, the front panel display and indicators on the player become dark, off, or bright in sequence. The power indicator is not turned off by pressing DIMMER however. You can change the brightness also using the setup display (page 65).

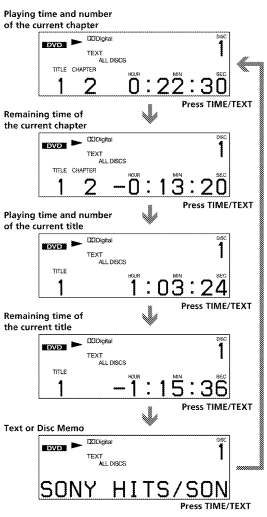
When playing back a DVD DVD

Displaying information while playing the disc



Checking the remaining time

Press TIME/TEXT.
Each time you press TIME/TEXT while playing the disc, the display changes as shown in the following chart.

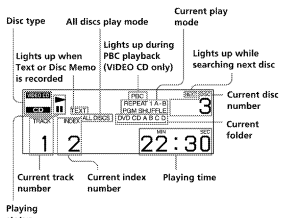

Playing time and number of the current chapter
Press TIME/TEXT
Remaining time of the current chapter
Press TIME/TEXT
Playing time and number of the current title
Press TIME/TEXT
Remaining time of the current title
Press TIME/TEXT
Text or Disc Memo
SONY HITS/SON
Press TIME/TEXT

Notes

- On some DVDs, the chapter number or time may not appear or you may not be able to change the front panel display.
- While you are doing Shuffle Play or Program Play, the playing time of the title and the remaining time of the title are not displayed.

When playing back a CD/VIDEO CD VIDEO CD CD

Displaying information while playing a disc



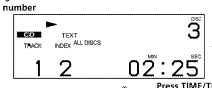
When playing VIDEO CDs with PBC functions
The current scene number is displayed instead of the current track number and the current index number. In this case, the front panel display does not change when you press TIME/TEXT. If TEXT is recorded on the disc, the front panel display changes to the Text display when you press TIME/TEXT (see page 43).

Using the Front Panel Display

Checking the remaining time

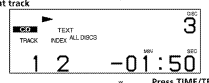
Press TIME/TEXT.
Each time you press TIME/TEXT while playing a disc, the display changes as shown in the following chart.

Playing time and current track number



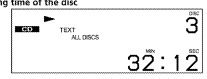
Press TIME/TEXT

Remaining time of the current track



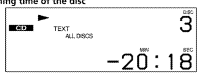
Press TIME/TEXT

Playing time of the disc



Press TIME/TEXT

Remaining time of the disc



Press TIME/TEXT

Text or Disc Memo

Press TIME/TEXT

Note

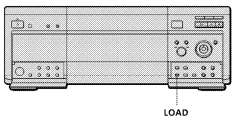
While you are doing Shuffle Play, or Program Play, the playing time of the disc and the remaining time of the disc are not displayed.

Displaying the Disc Information (Disc Explorer)

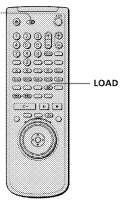
DVD VIDEO CD CD

You can check the contents of each disc loaded into the player.

Loading the disc information



Set the TV/DISC EXPLORER/DVD switch to DISC EXPLORER.



On the player:

Press LOAD when the player is in stop or standby mode.

On the remote:

1 Set the TV/DISC EXPLORER/DVD switch to DISC EXPLORER.

2 Press LOAD when the player is in stop or standby mode.

The player reads the disc information of all the discs and loads it into memory so that the disc type, titles and other text information can be displayed.

To cancel loading

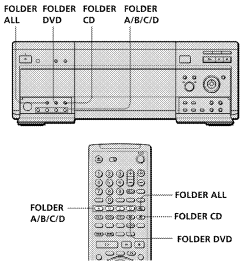
Press ■.

The player can load the disc information even when the power is in standby mode

Press LOAD before turning on the player. The player reads and loads all the disc information. After loading is complete, the player returns to the standby mode.

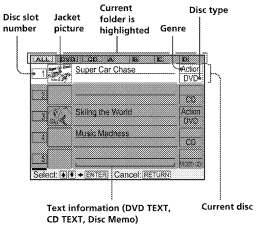
Displaying the information of the loaded discs

You can look at the loaded disc information on the Disc Explorer, and also select the disc to be played on the Disc Explorer.
The player has 7 folders (ALL, DVD, CD, A to D) and can display the Disc Explorer of each folder.
All the discs in the player are filed in the "ALL" folder. At the same time, DVDs are automatically filed in the "DVD" folder, and CDs and VIDEO CDs are in the "CD" folder.
You can file your discs as you like in the A to D folders.
See "Filing Discs in the Folder" (page 30).



Press the folder button (FOLDER ALL/DVD/CD/A/B/C/D) of the desied folder in stop mode.

The Disc Explorer of the selected folder appears.



Jacket picture

The jacket picture recorded on the disc appears automatically. If the jacket picture is not recorded, the genre picture recorded in the memory of the player is displayed when you select the genre.

Text information (DVD TEXT, CD TEXT or Disc Memo)

The text information (DVD TEXT or CD TEXT) recorded on the disc appears automatically. If no text information is recorded, you can store the text information (Disc Memo) yourself (page 32).

Genre

You can select the genre of the disc yourself (page 34).

Disc type

The disc type appears automatically. "?" appears when the player has not loaded the disc information in the memory.
If the selected slot does not contain a disc, the text information row is blank.

Selecting the disc on the Disc Explorer

1 Select the folder using the FOLDER buttons.
The Disc Explorer of the selected folder appears.

2 Select the disc by one of the following operations.
- pressing ↑/↓
- pressing the number buttons and ENTER
- pressing DISC CHANGE to turn the indicator on, followed by turning the I◄◄ –/►►I+ dial and then pressing it
- pressing DISC SKIP +/– on the remote

3 Press ENTER.
The Disc Explorer disappears and playback starts.

To cancel using the Disc Explorer

Press ↶RETURN.

Displaying the Disc Information (Disc Explorer)

Notes

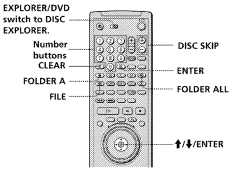
- If you press a FOLDER button during playback, the playback stops and the Disc Explorer appears. In this case, the Resume Play is not available.
- Even if you have removed the disc from the player, the disc information of the disc remains on the Disc Explorer until you load the disc information again by pressing LOAD or place a new disc in the same slot and play it.
- If you have inserted a disc whose disc information has not been loaded yet, you cannot select and play the disc on the Disc Explorer. The player skips the disc whose disc information differs from the loaded disc information, and plays the next loaded disc.
- If you load or try to play an empty slot, it appears as a blank in the Disc Explorer. You cannot select this.
- Even if the disc has a jacket picture recorded on it, the jacket picture may not appear on the Disc Explorer.
- Do not turn off the player by pressing ⏻. Doing so may cancel the settings. When you turn off the player, press ■ first to stop playback and then press I/⏻ on the remote. After the power indicator lights up in red and the player enters standby mode, press ⏻ on the player.

Filing Discs in the Folder (Disc Explorer - File Mode)

DVD VIDEO CD CD

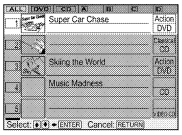
You can file your discs as you like in four individual folders, A to D. Even if you file discs from Folder ALL, DVD or CD to Folder A to D, those discs are not deleted from Folder ALL, DVD or CD. You can file up to 301 discs in one folder, and the same disc in different folders.
If you file your favorite discs in a folder (A to D), you can play only those discs, or set Program Play, Shuffle Play and Repeat Play for the discs within the folder.

Set the TV/DISC EXPLORER/DVD switch to DISC EXPLORER.

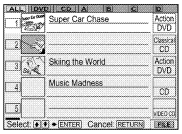


For example, to file DVDs in the no. 1 and no. 3 slots to Folder A

1 Press FOLDER ALL.
The Disc Explorer of Folder ALL appears.
You can also press FOLDER DVD to select a DVD.

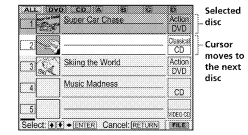


2 Press FILE to enter the file mode.
"FILE" appears at the right bottom corner.

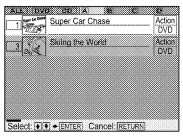


3 Select the disc using the number buttons, then press ENTER.
You can also use ↑/↓, DISC SKIP +/– on the remote. Or, you can press the DISC CHANGE button followed by turning and pressing the I◄◄ –/►►I+ dial.

4 Press ENTER.
To file more than one disc repeat Steps 3 and 4.



5 Press FOLDER A.
"FILE" disappears from the Disc Explorer. Then the Disc Explorer for Folder A containing the selected discs appears.



To cancel the file mode

Press ↶RETURN. "FILE" disappears from the Disc Explorer.

You can sort the discs by genre or text information

The discs are listed first by slot number in the Disc Explorer. You can then sort the discs by desired genre or text and store them (page 35).

Note

Do not turn off the player by pressing ⏻. Doing so may cancel the settings. When you turn off the player, press ■ first to stop playback and then press I/⏻ on the remote. After the power indicator lights up in red and the player enters standby mode, press ⏻ on the player.

Deleting discs from a folder

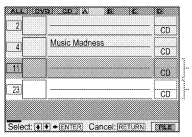
You can delete unnecessary discs from Folder A to D.
You cannot delete discs from Folder ALL, DVD or CD unless you remove the disc from the player.

1 Press the FOLDER (A/B/C/D) button of the disc you want to delete.
The Disc Explorer of the selected folder appears.

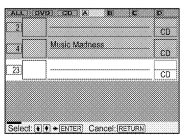
2 Press FILE to enter the file mode.
"FILE" appears at the right bottom corner.

3 Select the disc using the number buttons, then press ENTER.
You can also use ↑/↓, DISC SKIP +/– on the remote. Or, you can press the DISC CHANGE button followed by turning and pressing the I◄◄ –/►►I+ dial.

4 Press ENTER.
To delete other discs, repeat Steps 3 and 4.



5 Press CLEAR.
The disc disappears from the folder. "FILE" disappears from the Disc Explorer.



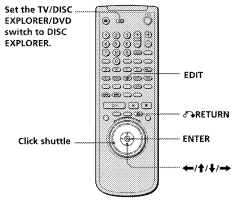
To cancel the file mode

Press ↶RETURN. "FILE" disappears from the Disc Explorer.

Labeling Discs and Folders (Disc Explorer - Edit Mode)

DVD VIDEO CD CD

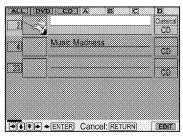
You can label the disc with a personal title of 16 characters (Disc Memo) when DVD TEXT or CD TEXT is not recorded on the disc, and the folders A through D with a title of 3 characters.
The Disc Memo can be anything you like, such as a title, musician's name, category or date of purchase.
You can also assign a genre label to the disc. This will help you keep your discs organized.



Labeling a disc or folder

1 Select the disc or folder you want to label.

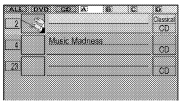
To label a disc:
Select the disc on the Disc Explorer, then press EDIT to enter the edit mode.
The selected disc's text only is highlighted and "EDIT" appears at the right bottom corner.



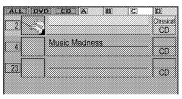
To label a folder:

1 Press EDIT to enter the edit mode.

2 Press ↑.
The folder A is highlighted.



3 Select the folder you want to label by pressing ←/→.

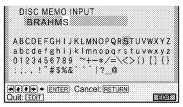


2 Press ENTER.
The DISC MEMO INPUT display appears when you have selected a disc.
The FOLDER NAME INPUT display appears when you have selected a folder.

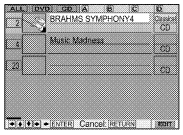
3 Select a character by pressing ←/↑/↓/→ or by turning the click shuttle.
The selected character changes color.

4 Press ENTER.

5 Repeat Steps 3 and 4 to input other characters.



6 When you have entered all the characters for the Disc Memo or folder name, press EDIT.
The DISC MEMO INPUT display or the FOLDER NAME INPUT display disappears and the Disc Memo or folder name is stored.



To cancel the edit mode
Press RETURN. "EDIT" disappears from the Disc Explorer.

To correct the characters
You can correct the characters using the I◄◄ –/►►I+ dial on the player or I◄◄ / ►►I on the remote. To use the I◄◄ –/►►I+ dial, press DIRECT SEARCH to turn it on.

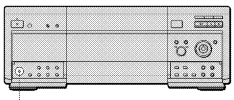
- To erase the characters:
  1. Move the cursor to the character you want to erase by pressing I◄◄ or ►►I or by turning the I◄◄ –/►►I+ dial.
  2. Press CLEAR.
- To insert or overwrite the characters:
  1. Move the cursor to the character you want to correct by pressing I◄◄ or ►►I.
  2. Select the correct character by pressing ←/↑/↓/→ or by turning the click shuttle.
  3. To insert the character, press ENTER.
     To overwrite, don't press ENTER but move the cursor by pressing ►►I or by turning the I◄◄ –/►►I+ dial clockwise.

Notes
- Do not turn off the player by pressing ⏻. Doing so may cancel the settings. When you turn off the player, press ■ first to stop playback and then press I/⏻ on the remote. After the power indicator lights up in red and the player enters standby mode, press ⏻ on the player.
- You can label up to 301 discs. When you have the player store a new disc in memory, the data for the old disc is erased.
- Even if you have removed the disc from the player, the disc information of the disc remains on the Disc Explorer until you load the disc information again by pressing LOAD or place a new disc in the same slot and play it.

Labeling the disc or folder using a keyboard

To label the disc or folder, you can use an IBM compatible PC keyboard of the USA model* (not supplied) on the DISC MEMO INPUT or FOLDER NAME INPUT display.

* Power consumption must be 120 mA or less.



KEYBOARD jack

1 Connect a keyboard to the KEYBOARD jack on the front panel when the power of the player is not on.

2 Turn on the player.

3 Do Steps 1 and 2 of "Labeling a disc or folder" to display the DISC MEMO INPUT or FOLDER NAME INPUT display.

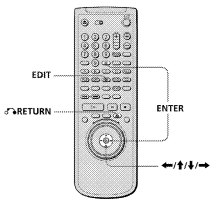
4 Input the characters on the keyboard.

5 Press ENTER on the keyboard to store the Disc Memo or folder name.
The DISC MEMO INPUT display or the FOLDER NAME INPUT display disappears and the Disc Memo or folder name is stored.

Notes
- If the cursor keys do not work correctly and you cannot complete the task using the keyboard, disconnect the keyboard then reconnect it to the player and try again.
- If the keyboard is not the USA model, the characters may be input differently from those on the keys.
  The USA keyboard layout is shown below.

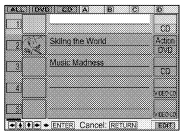
Selecting a genre

You can assign a genre to your disc.

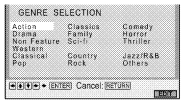


1 Select the disc on the Disc Explorer using ↑/↓.

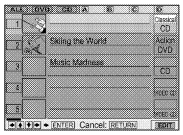
2 Press EDIT to enter the edit mode.
The selected disc's text only is highlighted and "EDIT" appears at the right bottom corner.



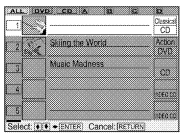
3 Press →, then ENTER.
The GENRE SELECTION display appears.



4 Select the genre using ←/↑/↓/→, then press ENTER.
The genre for the selected disc is stored in memory. If no jacket picture is recorded in the disc, the genre picture in the memory of the player is displayed.



5 Press RETURN to return to the original Disc Explorer display.

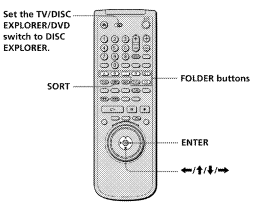


To cancel the edit mode
Press RETURN. "EDIT" disappears from the Disc Explorer.

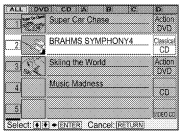
Sorting Discs (Disc Explorer - Sort Mode)

DVD VIDEO CD CD

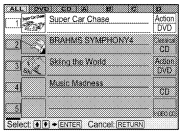
You can sort the discs in the folder by disc slot number, text information (DVD TEXT/CD TEXT/Disc Memo) or genre.
The text information is sorted alphabetically.
In case of the genre, the selected genre comes first.



1 Select the folder you want to sort using the FOLDER buttons.

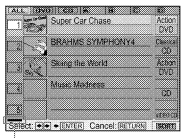


2 If you want to sort by text information or genre, select the disc which has the desired text information or the genre by pressing ↑/↓.



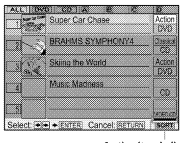
Sorting Discs (Disc Explorer - Sort Mode)

3 Press SORT to enter the sort mode.
The selected disc only is highlighted and "SORT" appears at the right bottom corner.



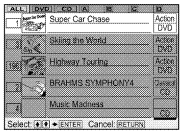
Sorting item indicator (green)

4 Select the item you want to sort by using ←/→.
You can select the disc number, text information or genre. The sorting item indicator moves to the selected item.



Sorting item indicator position when you sort by genre

5 Press ENTER.
The discs are sorted and re-displayed. The sorted order remains even if the power of the player is turned off.



The disc order in the same genre
The discs in the same genre are sorted by numerical order of the disc slot number.

Note
Do not turn off the player by pressing ⏻. Doing so may cancel the settings. When you turn off the player, press ■ first to stop playback and then press I/⏻ on the remote. After the power indicator lights up in red and the player enters standby mode, press ⏻ on the player.

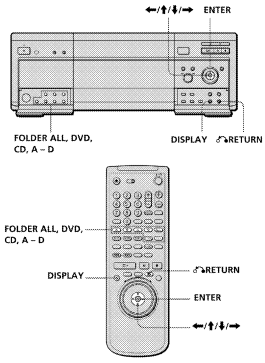
To cancel the sort mode
Press ↵RETURN. "SORT" disappears from the Disc Explorer.

Using Various Functions with the Control Menu

This chapter describes how to play discs in various modes and how to use the convenient features of the on-screen menu (Control Menu).

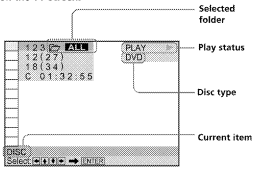
Using the Control Menu Display DVD VIDEO CD CD

Using the Control Menu display, you can select the starting point, play scenes in any order you like, change the viewing angles, make Digital Cinema Sound settings, and other such operations.
The possible operations are different depending on the kind of disc.
For details on each Control Menu display item, see pages 39 to 59.



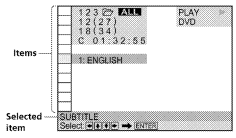
1 Select the desired folder.

2 Press DISPLAY to show the Control Menu display on the TV screen.

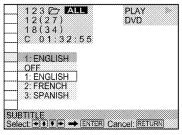


Using the Control Menu Display

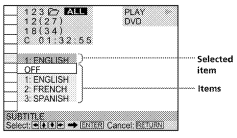
3 Select the item you want using ↑/↓.



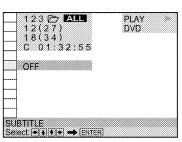
4 Press ENTER.



5 Select the item you want using ↑/↓.



6 Press ENTER.



To cancel while making a selection
Press ↵RETURN.

To display other items
Each time you press DISPLAY, the Control Menu display changes as follows:

Control Menu display 1
⇩
Control Menu display 2
(The items except the first three items from the top are changed to other items.)
⇩
ADVANCED display (see page 48)
⇩
Control Menu display off

The Control Menu display items are different depending on the disc.

You can select some items directly
Some items can be selected by pressing the corresponding button on the remote or on the player. In this case, only the item you selected is displayed. For instructions on using the buttons, see the pages of each relevant item. For a list of available buttons on the player and remote, see pages 83 to 86.

Note
Some Control Menu display items require operations other than selecting the setting. For details on these items, see the relevant pages.

Control Menu Item List

DISC (page 40)

TITLE (DVD only) (page 40)/ SCENE (VIDEO CD during PBC playback only) (page 40)/ TRACK (VIDEO CD only) (page 40)

CHAPTER (DVD only) (page 40)/ INDEX (VIDEO CD only) (page 40)

TRACK (CD only) (page 40)

INDEX (CD only) (page 40)

You can select a disc or search for a point on the disc by selecting the title, chapter, track, index or scene.

TIME/MEMO (pages 41, 42, 43)

TIME/TEXT (pages 41, 42, 43)

You can check the playing time and remaining time of the current title, chapter, track and the total playing time or remaining time of the disc.
You can also search for a scene by inputting the time code.
You can check the DVD TEXT or CD TEXT of the disc on the TV screen and the front panel display.

AUDIO (page 43)

If the DVD is recorded with multilingual tracks, you can select the language you want while playing the DVD.
If the DVD is recorded in multiple audio formats (PCM, Dolby Digital or DTS), you can select the audio format you want while playing the DVD.
With CDs or VIDEO CDs, you can select the sound from the right or left channel and listen to the sound of the selected channel through both the right and left speakers.

SUBTITLE (DVD only) (page 45)

With DVDs on which multilingual subtitles are recorded, you can change the subtitle language whenever you want while playing the DVD, and turn it on or off whenever you want.

ANGLE (DVD only) (page 46)

With DVDs on which various angles (multi-angles) are recorded, you can change the angle of the scene.

VES (DVD only) (page 47)

Select a mode to enjoy multichannel surround sound such as Dolby Digital.
Even if you connect only TV or front speakers, Virtual Enhanced Surround (VES) lets you enjoy 3D sound by using 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers.

ADVANCED (DVD only) (page 48)

You can check play information about the bit rate or the position where the disc is being played (layer).

CUSTOM PARENTAL CONTROL (page 49)

Using a registered password, you can set playback restrictions for a desired disc.
The same password is used for both Parental Control (page 66) and Custom Parental Control.

SETUP (page 60)

Using the setup display, you can do the initial setup, adjust the picture and sound and set the various outputs. You can also set a language for the subtitles and the setup display, limit playback by children, and so on. For details about the setup display, see page 60.

1/ALL DISCS (page 51)

You can have the player play one or all of the discs in the selected folder. You can switch between one disc mode or all disc mode in the Program Play, Shuffle Play and Repeat Play modes.

PROGRAM (page 52)

You can play the contents of the disc(s) in the order you want by arranging the order of the titles, chapters or tracks on the disc(s) to create your own program.

SHUFFLE (page 54)

You can have the player "shuffle" titles, chapters or tracks and play them in a random order. Subsequent "shuffling" may produce a different playing order.

REPEAT (page 55)

You can play all of the titles/tracks on a disc or all of the discs, or a single title/chapter/track repeatedly.

Control Menu Item List

A-B REPEAT (page 56)
You can play a specific portion of a title, chapter, or track repeatedly.

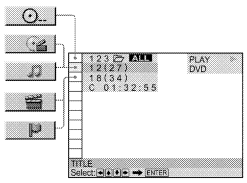
VIEWER (DVD, VIDEO CD only) (page 57)
You can divide the screen into 9 sections (quick reference screen) and quickly search for a scene or a bookmark.

Searching for a Disc/Title/ Chapter/Track/Index/Scene

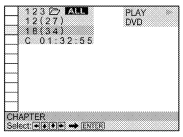
DVD VIDEO CD CD

You can select a disc, or search the disc by title, chapter, track, index or scene.

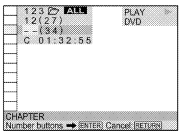
Select "DISC," "TITLE," "CHAPTER," "TRACK," "INDEX" or "SCENE" after pressing DISPLAY.
When you play back a DVD, "TITLE" and "CHAPTER" are displayed.
When you play back a VIDEO CD/CD, "TRACK" and "INDEX" are displayed. When you play back a VIDEO CD with PBC functions, "SCENE" is displayed.



1 Select "DISC," "TITLE," "CHAPTER," "TRACK," "INDEX" or "SCENE" using ↑/↓.
"✱✱ (✱✱)" is highlighted (✱✱ refers to a number).
The number in parentheses indicates the total number of titles, chapters, tracks, indexes or scenes.



2 Press ➡ or ENTER.
"✱✱ (✱✱)" changes to "— — (✱✱)".



3 Select the number of the disc, title, chapter, track, index or scene you want to search for using the number buttons, then press ENTER.
The player starts playback at the selected number.
To cancel the number, press CLEAR before pressing ENTER.

To cancel while making a selection
Press ↶RETURN.

Notes
- The title, chapter or track number displayed is the same number recorded on the disc.
- The index numbers are not displayed during PBC playback of VIDEO CDs.
- If you cannot search the desired disc in Step 3, the disc is not included in the current folder. To search the desired disc from all the discs in the player, press FOLDER ALL to select the ALL folder.

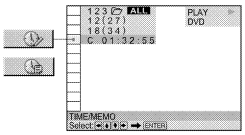
You can search for a title, chapter, or track using the VIEWER
See "Scanning the title, chapter, or track" on page 58 for more information about using the VIEWER.

Checking the Playing Time and Remaining Time

DVD VIDEO CD CD

You can check the playing time and remaining time of the current title, chapter or track and the total playing time or remaining time of the disc.

Press DISPLAY. Then press TIME/TEXT to change the time information.
You can also check the DVD TEXT, CD TEXT or Disc Memo (page 43).



When playing a DVD
■ TIME/MEMO or TIME/TEXT
- C ✱✱:✱✱:✱✱ : Playing time of the current chapter
- C –✱✱:✱✱:✱✱ : Remaining time of the current chapter
- T ✱✱:✱✱:✱✱ : Playing time of the current title
- T –✱✱:✱✱:✱✱ : Remaining time of the current title

When playing a VIDEO CD (during PBC playback)
■ TIME/MEMO
- ✱✱:✱✱ : Playing time of the current scene

When playing a VIDEO CD (in continuous play) or CD
■ TIME/MEMO or TIME/TEXT
- T ✱✱:✱✱ : Playing time of the current track
- T –✱✱:✱✱ : Remaining time of the current track
- D ✱✱:✱✱ : Playing time of the current disc
- D –✱✱:✱✱ : Remaining time of the current disc

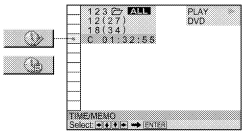
You can select "TIME/MEMO" or "TIME/TEXT" directly
Press TIME/TEXT on the remote or on the player. Each time you press the button, the time information changes.

Selecting a Starting Point Using the Time Code

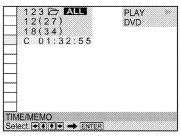
DVD

You can search for a starting point by inputting the time code.

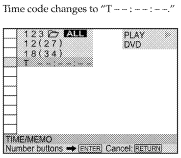
Select "TIME/MEMO" or "TIME/TEXT" after pressing DISPLAY.
The time code corresponds to the approximate actual playing time. For example, to search for a scene 2 hours 10 minutes 20 seconds past the beginning, input 2:10:20.



1 Select "C ✱✱:✱✱:✱✱" (playing time of the current chapter) when playing a DVD.



2 Press ➡ or ENTER.
Time code changes to "T – – : – – : – –."



3 Input the time code using the number buttons, then press ENTER.
The player starts playback at the selected time code.
To cancel the number, press CLEAR before pressing ENTER.

To cancel while making a selection
Press ↶RETURN.

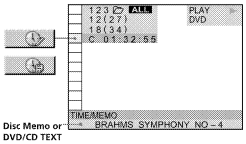
Note
When you input the time code, input the playing time of the title, not the chapter or track time.

Viewing the Disc Information

DVD VIDEO CD CD

You can check the DVD TEXT, CD TEXT or Disc Memo on the TV screen and the front panel display.

Press DISPLAY. Then press TIME/TEXT until DVD/CD TEXT is displayed. DVD TEXT and CD TEXT are information recorded on the disc which you cannot change.
The information is displayed at the bottom of the display.
If you entered a Disc Memo in Edit mode of the Disc Explorer function, the Disc Memo will appear at the bottom of the display instead.
If the disc does not contain a label, "NO TEXT" is displayed.



Disc Memo or DVD/CD TEXT

You can select "TIME/MEMO" or "TIME/TEXT" directly
Press TIME/TEXT on the remote or on the player. To display DVD/CD TEXT or Disc Memo, press TIME/TEXT until DVD/CD TEXT or Disc Memo is displayed.

You can view the entire DVD/CD TEXT or Disc Memo recorded on the disc
DVD/CD TEXT or Disc Memo is scrolled on the front panel display.

You can input the text information (Disc Memo)
You can input the Disc Memo on the Disc Explorer (see page 32).

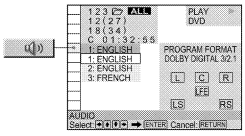
Notes
- "NO TEXT" appears when the DVD/CD TEXT is not recorded on the disc.
- This player can only display the first level of DVD/CD TEXT information.

Changing the Sound

DVD VIDEO CD CD

If the DVD is recorded with multilingual tracks, you can select the language you want while playing the DVD.
If the DVD is recorded in multiple audio formats (PCM, Dolby Digital or DTS), you can select the audio format you want while playing the DVD.
With multiplex CDs or VIDEO CDs, you can select the sound from the right or left channel and listen to the sound of the selected channel through both the right and left speakers. In this case, the sound loses its stereo effect. For example, with a disc containing a song, the right channel may output the vocals and the left channel may output the instrumental. If you only want to hear the instrumental, you can select the left channel and hear it from both speakers.

Select "AUDIO" after pressing DISPLAY.



■ AUDIO
When playing a DVD
Select the language. The languages you can select are different depending on the DVD. When 4 digits are displayed, they represent the language code. Select the language code from the list on page 82.
When the same language is displayed two or more times, the DVD is recorded in multiple audio formats. The current audio format is shown on the "PROGRAM FORMAT" display.

When playing a VIDEO CD or a CD
The default setting is underlined.
- STEREO : The standard stereo sound
- 1/L : The sound of the left channel (monaural)
- 2/R : The sound of the right channel (monaural)

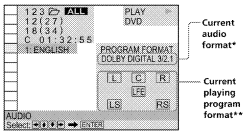
Changing the Sound

You can select "AUDIO" directly
Press AUDIO on the remote. Each time you press the button, the item changes.

Notes
- Depending on the DVD, you may not be able to change the languages even if multilingual tracks are recorded on the DVD.
- While playing the CD/VIDEO CD, standard stereo playback will be resumed when:
  - you open the front cover
  - the player enters standby mode by pressing I/⏻ on the remote
  - you turn the power off by pressing ⏻ on the player
- While playing the DVD, the sound may be changed when:
  - you open the front cover
  - you change the title
- If "DTS" is set to "OFF" in "AUDIO SETUP," the DTS track selection option will not appear on the screen even if the disc contains DTS tracks.

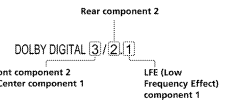
Displaying the audio information of the disc DVD

When you select "AUDIO," the channels being played are displayed on the screen.
For example, in Dolby Digital format, multiple signals ranging from monaural to 5.1 channel signals can be recorded on a DVD. Depending on the DVD, the number of the recorded channels may be different.



* "PCM," "DTS" or "DOLBY DIGITAL" is displayed. In case of "DOLBY DIGITAL," the channels in the playing track are displayed by numbers as follows:

For Dolby Digital 5.1 ch:

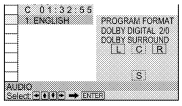


** The letters in the program format display mean the following:
- L: Front (left)
- R: Front (right)
- C: Center (monaural)
- LS: Rear (left)
- RS: Rear (right)
- S: Rear (monaural) – the rear component of the Dolby Surround processed stereo signal and the Dolby Digital signal.
- LFE: LFE (Low Frequency Effect)

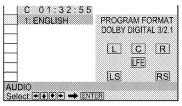
The display examples are as follows:

•PCM (stereo)

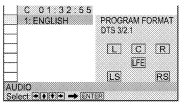
•Dolby Surround



•Dolby Digital 5.1ch
"LFE" appears only when a disc contains an LFE signal component. "LFE" remains on the "PROGRAM FORMAT" display even if the LFE signal component is not being output.



•DTS
"LFE" is always enclosed in a solid line regardless of the LFE signal component being output.

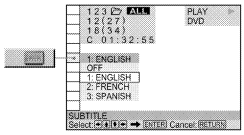


Note
When the signal does not contain rear signal components such as LS, RS or S, the Virtual Enhanced Surround (VES) effect cannot be heard (page 47).

Displaying the Subtitles DVD

With DVDs on which subtitles are recorded, you can turn the subtitles on and off whenever you want while playing the DVD.
With DVDs on which multilingual subtitles are recorded, you can change the subtitle language whenever you want while playing the DVD, and turn it on or off whenever you want. For example, you can select the language you want to practice and turn the subtitles on for better understanding.

Select "SUBTITLE" after pressing DISPLAY.



■ SUBTITLE
Select the language. The languages you can select are different depending on the DVD. When 4 digits are displayed, they indicate the language code. Select the language code from the list on page 82.

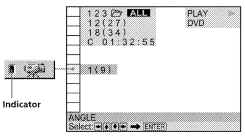
You can select "SUBTITLE" directly
Press SUBTITLE on the remote. Each time you press the button, the item changes.

Notes
- When playing a DVD on which no subtitles are recorded, no subtitles appear.
- Depending on the DVD, you may not be able to turn the subtitles on even if they are recorded on the DVD.
- Depending on the DVD, you may not be able to turn the subtitles off.
- The type and number of languages for subtitles vary from disc to disc.
- Depending on the DVD, you may not be able to change the subtitles even if multilingual subtitles are recorded on it.
- While playing the DVD, the subtitle may change when:
  – you open the front cover
  – you change the title

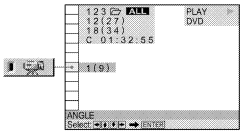
Changing the Angles DVD

With DVDs on which various angles (multi-angles) for a scene are recorded, you can change the angles. For example, while playing a scene of a train in motion, you can display the view from either the front of the train, the left window of the train or from the right window without having the train's movement interrupted.

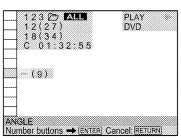
Select "ANGLE" after pressing DISPLAY. When the angles can be changed, the "ANGLE" indicator lights up in green.



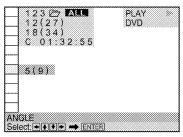
1 Select "ANGLE."



2 Press →.
The number of the angle changes to "–". The number in parentheses indicates the total number of angles.



3 Select the angle number using the number buttons or ↑/↓, then press ENTER.
The angle is changed to the selected angle.



You can select the angle directly
Press ANGLE on the remote. Each time you press the button, the angle changes.

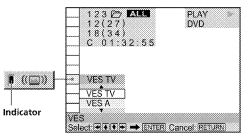
You can display different angles simultaneously (ANGLE VIEWER)
You can display all the angles recorded on the disc on the same screen, and start playback in continuous mode from the chosen angle directly. The angles are displayed on a screen divided in 9 sections. For details, see page 57.

Notes
- The number of angles varies from disc to disc or from scene to scene. The number of angles that can be changed on a scene is equal to the number of angles recorded for that scene.
- Depending on the DVD, you may not be able to change the angles even if multi-angles are recorded on the DVD.

Digital Cinema Sound Settings DVD

Select a mode to enjoy multichannel surround sound such as Dolby Digital.
Even if you connect only a stereo TV or front speakers, Virtual Enhanced Surround (VES) lets you enjoy 3D sound by using 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L: left, R: right) without using actual rear speakers.
The surround sound signals are output from the AUDIO OUT connectors. These signals are not output from the DIGITAL OUT OPTICAL or COAXIAL connector.
When you select a surround mode, the player does not output the Dolby Digital signals from the DIGITAL OUT OPTICAL or COAXIAL connector if you set "DOLBY DIGITAL" in "AUDIO SETUP" to "D-PCM."

Select "VES" after pressing DISPLAY. When you select any item except "OFF," the "VES" indicator lights up in green.



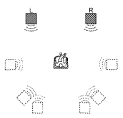
■ VES
Select the desired item. For details on each item, see "Effects of each item."
The default setting is underlined.
- OFF
- VES TV
- VES A
- VES B
- VIRTUAL SEMI MULTI DIMENSION

Effects of each item

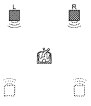
OFF
Outputs 2-channel signals for stereo sound. 5-channel signals for Dolby Digital sound of a DVD are mixed down to 2-channels.

VES (Virtual Enhanced Surround) TV
Uses 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers. This mode is effective when the distance between the front L and R speakers is short, such as built-in speakers on a stereo TV.

VES (Virtual Enhanced Surround) A
Uses 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers. The virtual speakers are reproduced as shown in the illustration below.

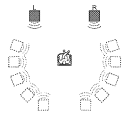


VES (Virtual Enhanced Surround) B
Uses 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers. The virtual speakers are reproduced as shown in the illustration below.



Digital Cinema Sound Settings

VIRTUAL SEMI MULTI DIMENSION
Uses 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers. This mode creates 5 sets of virtual speakers surrounding the listener at a 30° angle of elevation.



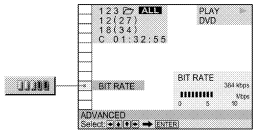
You can select "VES" directly
Press VES on the player. Each time you press the button, the item changes.

Notes
- When you select an item, the sound cuts off for a moment.
- When the playing signal does not contain the surround component, the effects may be difficult to hear even if you select "VES TV," "VES A," "VES B" or "VIRTUAL SEMI MULTI DIMENSION."
- Set the front speakers to form an equilateral triangle with the listening position at the top, or the effects may be difficult to hear even if you select "VES A," "VES B" or "VIRTUAL SEMI MULTI DIMENSION."
- When you select "VES TV," "VES A," "VES B" or "VIRTUAL SEMI MULTI DIMENSION," set the surround settings of the connected units, such as the amplifier, to OFF.

Checking the Play Information DVD

You can check information such as the bit rate or the disc layer that is being played.
While playing a disc, the approximate bit rate of the playback picture is always displayed as Mbps (Mega bit per second) and the audio as kbps (kilo bit per second).

Select "ADVANCED" after pressing DISPLAY.



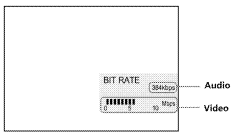
■ ADVANCED
The default setting is underlined.

When playing a DVD
- BIT RATE: displays the bit rate.
- LAYER: displays the layer and the pick-up point.
- OFF: turns off the ADVANCED display.

Displays of each item

By pressing DISPLAY repeatedly, you can display either "BIT RATE" or "LAYER," whichever was selected in "ADVANCED."

BIT RATE



Bit rate refers to the amount of video/audio data per second in a disc. The higher the bit rate, the larger the amount of data. When the bit rate level is high, there is a large amount of data. However, this does not always mean that you can get higher quality pictures or sounds.

LAYER

Appears when the DVD has dual layers

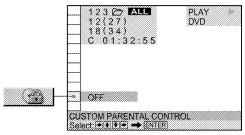
Indicates the approximate point where the disc is playing. If it is a dual-layer DVD, the player indicates which layer is being read ("Layer 0" or "Layer 1").
For details on the layers, see page 81 (DVD).

Locking Discs (Custom Parental Control)

DVD VIDEO CD CD

Using a registered password, you can set playback restrictions for the desired disc(s).
You can set the same Custom Parental Control password for up to 301 slots. When you have the player store a new disc in memory, the data for the old disc is erased.
The same password is used for both Parental Control (page 66) and Custom Parental Control.

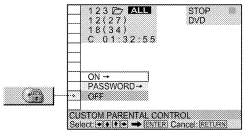
Select "CUSTOM PARENTAL CONTROL" after pressing DISPLAY.



Setting the Custom Parental Control for a disc

1 Select the disc you want to lock.
If a disc is playing, press ■ to stop playback.

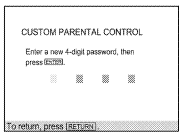
2 Select "CUSTOM PARENTAL CONTROL" using ↑/↓, then press ENTER.



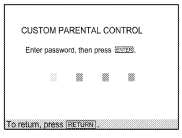
Locking Discs (Custom Parental Control)

3 Select "ON→" using ↑/↓, then press ENTER.

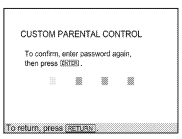
■ If you have not entered a password
The display for entering a password appears.



■ When you have already registered a password
The display for confirming the password appears. Skip Step 4.



4 Enter a 4-digit password using the number buttons, then press ENTER.
The digits change to asterisks (✱), and the display for confirming the password appears.



5 Enter the same 4-digit password using the number buttons, then press ENTER.
"Custom parental control is set." appears and then the screen returns to the Control Menu display.

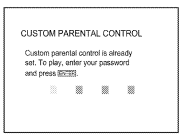
To return to the normal screen
Press ↶RETURN.

To turn off the Custom Parental Control function
1 Select the disc for which you want to turn off the Custom Parental Control function.
2 Select "CUSTOM PARENTAL CONTROL" using ↑/↓, then press ENTER.
3 Select "OFF→" using ↑/↓, then press ENTER.
4 Enter your 4-digit password using the number buttons, then press ENTER.

To change the password
1 Select "CUSTOM PARENTAL CONTROL" using ↑/↓, then press ENTER.
2 Select "PASSWORD→" using ↑/↓, then press ENTER.
3 Enter your 4-digit password using the number buttons, then press ENTER.
The display for changing the password appears.
4 Enter a new 4-digit password using the number buttons, then press ENTER.
5 To confirm your password, re-enter it using the number buttons, then press ENTER.

Playing the disc for which the Custom Parental Control is set

1 Select the disc.
The CUSTOM PARENTAL CONTROL display appears.



2 Enter your 4-digit password using the number buttons, then press ENTER.
The player starts playback.

If you forget your password
Enter the 6-digit number "199703" whenever the CUSTOM PARENTAL CONTROL display asks you for your password, then press ENTER. The display will ask you to enter a new 4-digit password.

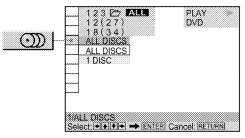
Note
Unless you enter the password, the player cannot play the disc for which the Custom Parental Control is set. When you do not know the password, press OPEN/CLOSE and remove the disc.

Selecting the Disc Mode (1 Disc or All Discs)

DVD VIDEO CD CD

You can have the player play one disc or all of the discs in the player.
Before setting Program Play, Shuffle Play, or Repeat Play, you must select whether to set those play modes on one disc or all of the discs.

Select "1/ALL DISCS" after pressing DISPLAY.



■ 1/ALL DISCS
- ALL DISCS: will play all of the discs in the player in consecutive order. Also allows you to set Program Play, Shuffle Play or Repeat Play for all of the loaded discs.
- 1 DISC: will play the selected disc to the end. Also allows you to set Program Play, Shuffle Play or Repeat Play for 1 disc only.

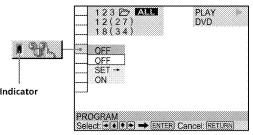
You can select the mode directly
Press 1/ALL DISCS on the remote or the player. Each time you press the button, 1 DISC or ALL DISCS mode is selected.

Creating Your Own Program (Program Play)

DVD VIDEO CD CD

You can play the contents of the disc(s) in the order you want by arranging the order of the titles, chapters or tracks on the disc(s) and create your own program. One program can be stored in the player and contain up to 99 titles, chapters and tracks. By selecting "1/ALL DISCS," you can create a program for one or all of the discs in the player.

Select "PROGRAM" after pressing DISPLAY. When you select "ON," the "PROGRAM" indicator lights up in green.



■ PROGRAM

The default setting is underlined.

- OFF: plays normally.
- SET➡: allows you to create your own program.
- ON: plays Program Play.

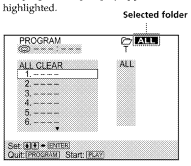
Note

If the program contains a disc which is not included in the current folder, the disc will not be played during Program Play. To play all the discs in the program select the ALL folder before you start Program Play.

Creating the program

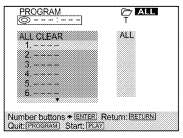
1 Select "SET➡" in "PROGRAM."

The programming display appears and "1" is highlighted.



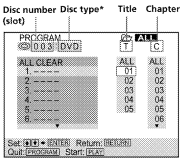
2 Press ENTER.

It is ready to set the first disc of a title or track for Program Play.



3 Select the disc you want to program using the number buttons or ↑/↓, then press ENTER.

To select the EASY PLAY disc, press 301. "EZ" appears at the disc number.



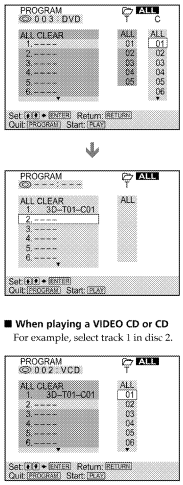
* "?" appears when the player has not loaded the disc information in the memory. If an empty slot is loaded, the disc type does not appear.

4 Select the title, chapter or track you want to program using ↑/↓, then press ENTER.

You can also use the number buttons and ENTER button to make a selection. In this case, the selected number is displayed on the screen.

■ When playing a DVD

For example, select title 1, chapter 1 in disc 3. When both titles and chapters are recorded on the disc, select the title, then the chapter.



■ When playing a VIDEO CD or CD

For example, select track 1 in disc 2.

5 To program other discs, titles, chapters or tracks, repeat Steps 3 and 4.

The programmed discs, titles, chapters or tracks are displayed in the selected order.

6 Press ▷ to start Program Play.

To stop Program Play

Press CLEAR on the remote.

To cancel programming

Press PROGRAM on the remote.

To change the program

1 In Step 3, select the disc for which you want to change the program using ↑/↓.
2 Follow Step 4 for new title, chapter or track programming.

To cancel the programmed order

To cancel all the titles, chapters or tracks in the programmed order, select "ALL CLEAR."
To cancel the selected program, select the program using ↑/↓ then press CLEAR.

The program remains even after Program Play ends

When you press ▷, you can play the same program again.

You can do Repeat Play or Shuffle Play of the programmed titles, chapters or tracks

During Program Play, press REPEAT or SHUFFLE.
Or set "REPEAT" or "SHUFFLE" to "ON" in the Control Menu display.

You can select "PROGRAM" directly

Press PROGRAM on the remote.

For easier programming, load the disc information

Press LOAD when the player is in standby or stop mode so that the player reads and loads the disc information.

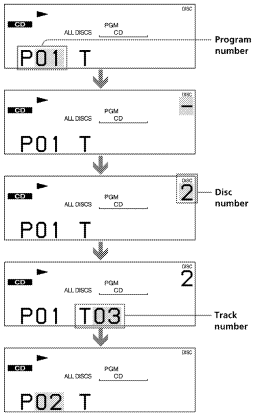
Disc types are abbreviated on-screen as follows.

DVD : D
VCD : V
CD : C

Creating Your Own Program (Program Play)

You can select discs, titles, chapters and tracks for the program by looking at the front panel display

You can program by looking at the front panel display instead of using the programming display on the TV screen.
When you select Track 3 in a CD in disc slot 2 in the CD folder for Program 1, the front panel display will appear as follows:



Notes

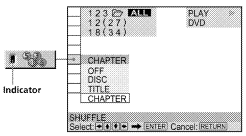
- The number of titles, chapters or tracks displayed are the same number of titles, chapters or tracks recorded on a disc.
- Program play is canceled when:
  - you open the front cover
  - the player enters standby mode by pressing I/⏻ on the remote
  - you turn the power off by pressing ⏻ on the player
- You cannot select side B contents for Program Play.
- Depending on the DVD, you may not be able to perform Program Play.
- If you are using the PBC playback function, you must first stop the disc before you can set a program.

Playing in Random Order (Shuffle Play)

DVD VIDEO CD CD

You can have the player "shuffle" discs, titles, chapters or tracks and play them in a random order. Subsequent "shuffling" may produce a different playing order. By selecting "1/ALL DISCS," you can have the player shuffle one disc or all of the discs in the selected folder.

Select "SHUFFLE" after pressing DISPLAY. When you select a shuffle mode other than "OFF," the "SHUFFLE" indicator lights up in green.



■ SHUFFLE

Selects the Shuffle Play setting.
The default settings are underlined.

When playing a DVD and when Program Play is set to OFF

- OFF: does not play the disc(s) in random order.
- DISC*: has the player "shuffle" discs in the folder and play them in a random order.
- TITLE: has the player "shuffle" titles in the folder and play them in a random order.
- CHAPTER: has the player "shuffle" chapters in the folder and play them in a random order.

When playing a VIDEO CD or CD (when Program Play is set to OFF)

- OFF: does not play the disc(s) in random order.
- DISC*: has the player "shuffle" discs in the folder and play them in a random order.
- TRACK: has the player "shuffle" tracks in the folder and play them in a random order.

When playing a VIDEO CD, CD or DVD (when Program Play is set to ON)

- OFF: does not play the disc(s) in random order.
- ON: has the player "shuffle" titles or tracks selected in Program Play and play them in a random order.

* Appears only when you select "ALL DISCS" in "1/ALL DISCS."

To stop Shuffle Play

Press CLEAR on the remote.

You can set Shuffle Play while the disc is stopped

After selecting the "SHUFFLE" option, press ▷.
The player starts Shuffle Play.

You can select "SHUFFLE" directly

Press SHUFFLE on the player or the remote. Each time you press the button, the item changes.

Notes

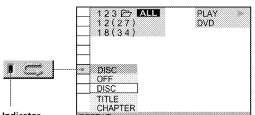
- Shuffle Play is canceled when:
  - you open the front cover
  - the player enters standby mode by pressing I/⏻ on the remote
  - you turn the power off by pressing ⏻ on the player
- Depending on the DVD, you may not be able to perform Shuffle Play.
- Up to 96 chapters in a disc can be played in random order when "CHAPTER" is selected.
- You cannot perform Shuffle Play during PBC playback of VIDEO CDs (page 25).
- You cannot set Shuffle Play on side B contents.

Playing Repeatedly (Repeat Play)

DVD VIDEO CD CD

You can play all discs, or all of the titles or tracks on a disc, or a single title, chapter or track repeatedly.
In Shuffle or Program Play mode, the player repeats the titles or tracks in the shuffled or programmed order. By selecting "1/ALL DISCS," you can have the player repeat one disc or all of the discs in the selected folder.
You cannot perform Repeat Play during PBC playback of VIDEO CDs (page 25).

Select "REPEAT" after pressing DISPLAY. When you select a repeat mode other than "OFF," the "REPEAT" indicator lights up in green.



■ REPEAT

Selects the Repeat Play setting.
The default settings are underlined.

When playing a DVD and when Program Play and Shuffle Play are set to OFF

- OFF: does not play repeatedly.
- DISC: repeats all titles on the selected disc when you select "1 DISC" in "1/ALL DISCS," and repeats all titles in all discs in the folder when you select "ALL DISCS."
- TITLE: repeats the current title on a disc.
- CHAPTER: repeats the current chapter.

When playing a VIDEO CD/CD and when Program Play and Shuffle Play are set to OFF

- OFF: does not play repeatedly.
- DISC: repeats all tracks on the selected disc when you select "1 DISC" in "1/ALL DISCS," and repeats all tracks in all discs in the folder when you select "ALL DISCS."
- TRACK: repeats the current track.

Playing Repeatedly (Repeat Play)

When Program Play or Shuffle Play is on
- OFF: does not play repeatedly.
- ON: repeats Program Play or Shuffle Play.

To stop Repeat Play
Press CLEAR on the remote.

You can set Repeat Play while the disc is stopped
After selecting the "REPEAT" option, press ▷.
The player starts Repeat Play.

You can select "REPEAT" directly
Press REPEAT on the player or the remote. Each time you press the button, the item changes.

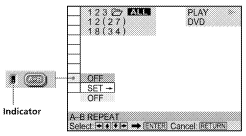
Notes
- Repeat play is canceled when:
  - you open the front cover
  - the player enters standby mode by pressing I/⏻ on the remote
  - you turn the power off by pressing ⏻ on the player
- Depending on the DVD, you may not be able to perform Repeat Play.
- You cannot set Repeat Play on side B contents.

Repeating a Specific Portion (A–B Repeat)

DVD VIDEO CD CD

You can play a specific portion of a title, chapter or track repeatedly. This function is useful when you want to do such things as memorize lyrics.
During PBC Playback of VIDEO CDs (page 25), this function is available only while playing moving pictures.

Select "A-B REPEAT" after pressing DISPLAY. During A-B Repeat Play, the "A-B REPEAT" indicator lights up in green.

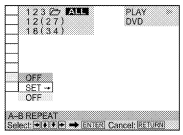


Indicator

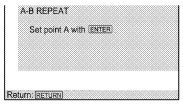
■ A-B REPEAT
The default setting is underlined.
- SET➡: sets the A and B points.
- OFF: does not play a specific portion of a title/chapter/track repeatedly.

Setting a portion for A-B repeat

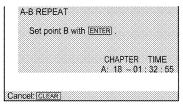
1 Select "A-B REPEAT" and press ENTER.



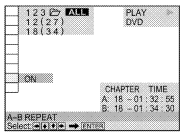
2 Select "SET➡" and press ENTER.
The A-B REPEAT setting display appears.



3 During playback, when you find the starting point (point A) of the portion to be played repeatedly, press ENTER.
The starting point (point A) is set.



4 When you reach the ending point (point B), press ENTER again.
The set points are displayed and the player starts repeating this specific portion.
"A-B" appears on the front panel display during A-B repeat play.



To stop A-B Repeat Play
Press CLEAR on the remote.

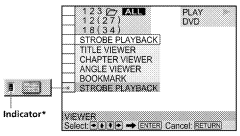
Notes
- You can set A-B Repeat for only one specific portion.
- A–B Repeat is canceled when:
  - you open the front cover
  - the player enters standby mode by pressing I/⏻ on the remote
  - you turn the power off by pressing ⏻ on the player
- When you set A-B Repeat, the settings for Shuffle Play, Repeat Play, and Program Play are canceled.
- You may not be able to set A-B Repeat for some DVD or VIDEO CD scenes.
- You cannot set the start point (point A) on one disc and ending point (point B) on other disc.

Using the Quick Reference Screen (VIEWER)

DVD VIDEO CD

You can divide the screen into 9 sections (quick reference screen) and enjoy the following functions.
- STROBE PLAYBACK
- TITLE VIEWER (DVD only)
- CHAPTER VIEWER (DVD only)
- TRACK VIEWER (VIDEO CD only)
- ANGLE VIEWER (DVD only)
- BOOKMARK

Select "VIEWER" after pressing DISPLAY.



Indicator*

* The indicator lights up when a bookmark is in memory.

Dividing a track into 9 sections (STROBE PLAYBACK)

DVD VIDEO CD

You can display 9 consecutive sections of the disc on the screen. If you are playing a disc, you can change the speed of the images on the screen by turning the click shuttle. When you press II, 9 still images around the pause position are displayed.

Select "STROBE PLAYBACK" in "VIEWER" and press ENTER. Nine consecutive scenes appear on the screen.

To cancel watching the strobe play
Press ↶RETURN.

Notes
- Depending on the disc, there are some scenes you may not be able to watch with the strobe play function.
- The sound is muted when using this function.

Using the Quick Reference Screen (VIEWER)

Scanning the title, chapter, or track

DVD VIDEO CD

You can check the first picture of titles, chapters or tracks of the disc, and start playback from the chosen title, chapter or track.

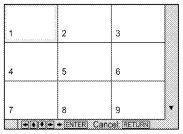
When playing a DVD, select "TITLE VIEWER" or "CHAPTER VIEWER" in "VIEWER" and press ENTER.

When playing a VIDEO CD, select "TRACK VIEWER" in "VIEWER" and press ENTER.

The screen will divide into 9 sections and show the first picture of each title, chapter or track.

To start playback from the selected picture
Select the picture using ←/↑/↓/→, then press ENTER. Playback starts from the selected picture.

When there are over 9 titles, chapters or tracks
▼ appears at the right bottom of the screen. Select the right bottom scene (the position 9) and use ↓ to display the next titles, tracks or chapters. To return to the previous scene, select the left top scene (the position 1) and press ↑.



You can check the number on the front panel display
The number of the title, chapter or track you selected is displayed on the front panel display.

To cancel scanning the title, chapter or track
Press ↶RETURN.

Notes
- Depending on the disc, you may not be able to scan the title, chapter or track.
- The sound is muted when using this function.

Displaying different angles simultaneously

DVD

With DVDs on which various angles (multi-angles) for a scene are recorded, you can display all of the angles recorded on the disc on the same screen, and start playback in continuous mode at the chosen angle. The angles are displayed on a screen divided in 9 sections.

Select "ANGLE VIEWER" in "VIEWER." The available angles appear on the screen.

To select one angle
Select the angle using ←/↑/↓/→, then press ENTER. The selected angle is displayed.

To cancel displaying multi-angles
Press ↶RETURN.

You can check the angle number on the front panel display
The number of the angle you selected is displayed on the front panel display.

Notes
- If only one angle is recorded on the disc, then you will not be able to use this function.
- Depending on the DVD, you may not be able to change the angles even if multi-angles are recorded on the DVD.
- When a scene for which various angles (multi-angles) are not recorded appears when using this function, the player returns to normal playback.
- The sound is muted when using this function.

Setting and selecting favorite scene (Bookmark)

DVD VIDEO CD

You can have the player store specific portions of the disc in memory and play them immediately whenever you want (Bookmark). Up to 9 bookmarks per disc for up to 301 slots can be stored in memory.

Select "BOOKMARK" in "VIEWER." The bookmarks appear on the screen.

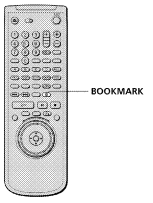
To start playback from the selected picture
Select the picture using ←/↑/↓/→, then press ENTER. Playback starts from the selected picture.

To cancel scanning the bookmark pictures
Press ↶RETURN.

To reset the bookmark
Select the bookmark you want to reset using ←/↑/↓/→, then press CLEAR.

To reset all of the bookmarks for the player
Select "BOOKMARK RESET➡" under "CUSTOM SETUP" in the setup display. For details on resetting all of the bookmarks for the player, see page 66.

Setting a bookmark
During playback, when you find a scene to be bookmarked, press BOOKMARK on the remote.



You can check the bookmark number on the front panel display
The number of the bookmark you selected is displayed on the front panel display.

Notes
- The player can store in memory the bookmarks of up to 301 slots. When you have the player store a new disc in memory, the data for the old disc is erased.
- Depending on the DVD, you may not be able to set the bookmark.
- Do not turn off the player by pressing ⏻. Doing so may cancel the settings. When you turn off the player, press ■ first to stop playback and then press I/⏻ on the remote. After the power indicator lights up in red and the player enters standby mode, press ⏻ on the player.
- The sound is muted when using this function.

Settings and Adjustments

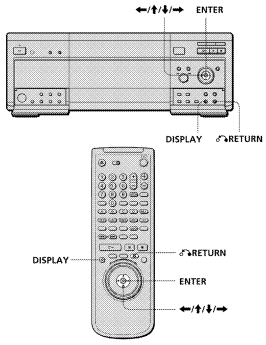
This chapter describes how to set and adjust the player using the on-screen setup menu. Most settings and adjustments are required to be set when you first use the player.
This chapter also describes how to set the remote for controlling the TV or the AV receiver (amplifier) or the CD changer.

Using the Setup Display

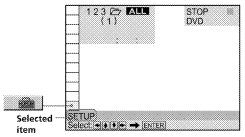
DVD VIDEO CD

Using the setup display, you can do the initial setup, adjust the picture and sound and set the various outputs. You can also set a language for the subtitles and the setup display, limit playback by children, and so on.
For details on each setup display item, see pages 63 to 71.

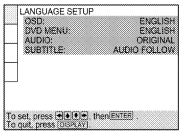
Note
You can display the setup display only when the player is in stop mode.



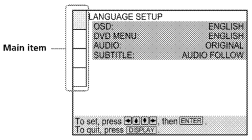
1 **Press DISPLAY and select "SETUP" using ↑/↓.**



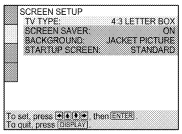
2 **Press ENTER.**
The setup display appears.



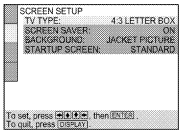
3 **Select the main item you want using ↑/↓.**



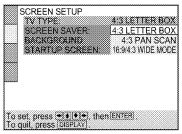
4 **Press ENTER.**
The selected main item is highlighted.



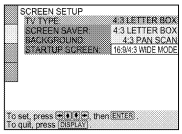
5 **Select the item you want using ↑/↓.**



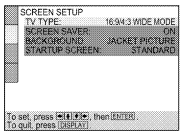
6 **Press ENTER.**


SCREEN SETUP
TV TYPE: 4:3 LETTER BOX
SCREEN SAVER: 4:3 LETTER BOX
BACKGROUND: 4:3 PAN SCAN
STARTUP SCREEN: 16:9/4:3 WIDE MODE
To set, press ←/↑/↓/→, then ENTER.
To quit, press DISPLAY.

7 **Select the setting you want using ←/↑/↓/→.**


SCREEN SETUP
TV TYPE: 4:3 LETTER BOX
SCREEN SAVER: 4:3 LETTER BOX
BACKGROUND: 4:3 PAN SCAN
STARTUP SCREEN: 16:9/4:3 WIDE MODE
To set, press ←/↑/↓/→, then ENTER.
To quit, press DISPLAY.

8 **Press ENTER.**



9 **Press DISPLAY.**
The setup display disappears.

10 **Press DISPLAY repeatedly to turn off the on-screen menu.**

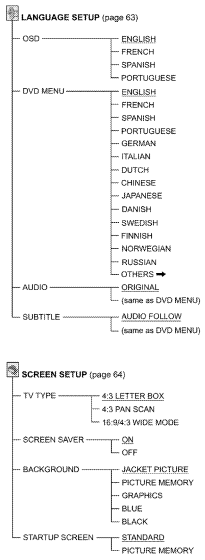
To return to the previous screen
Press RETURN.

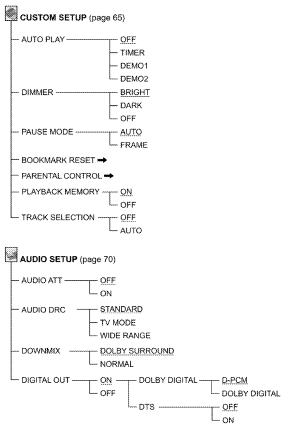
To quit while making a selection
Press DISPLAY.

Note
Some setup display items require operations other than selecting the setting. For details on these items, see the relevant pages.

Setup Display Item List

The default settings are underlined.



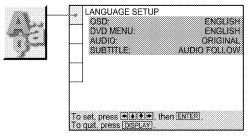


Setting the Display Language or Sound Track (LANGUAGE SETUP)

DVD VIDEO CD

"LANGUAGE SETUP" allows you to set various languages for the on-screen display or sound track.
The default settings are underlined.

Select "LANGUAGE SETUP" in the setup display.



Notes
- When you select a language that is not recorded on the DVD, one of the recorded languages is automatically selected for the "DVD MENU," "AUDIO" and "SUBTITLE" settings.
- Depending on the DVD, the player may not start playing with the selected language even when you select a language in "DVD MENU," "AUDIO" or "SUBTITLE."

■ OSD (On-Screen Display)
Selects the language for the on-screen display.
- ENGLISH
- FRENCH
- SPANISH
- PORTUGUESE

■ DVD MENU
Selects the language for the DVD menu.
- ENGLISH
- FRENCH
- SPANISH
- PORTUGUESE
- GERMAN
- ITALIAN
- DUTCH
- CHINESE
- JAPANESE
- DANISH
- SWEDISH
- FINNISH
- NORWEGIAN
- RUSSIAN
- OTHERS➡

When you select "OTHERS➡," select and enter the language code from the list using the number buttons (page 82).
After you have made a selection, the language code (4 digits) is displayed.

■ AUDIO
Selects the language for the sound track.
- ORIGINAL: the language given priority in the disc
- ENGLISH
- FRENCH
- SPANISH
- PORTUGUESE
- GERMAN
- ITALIAN
- DUTCH
- CHINESE
- JAPANESE
- DANISH
- SWEDISH
- FINNISH
- NORWEGIAN
- RUSSIAN
- OTHERS➡

When you select "OTHERS➡," select and enter the language code from the list using the number buttons (page 82).
After you have made a selection, the language code (4 digits) is displayed.

■ SUBTITLE
Selects the language for the subtitles.
- AUDIO FOLLOW*
- ENGLISH
- FRENCH
- SPANISH
- PORTUGUESE
- GERMAN
- ITALIAN
- DUTCH
- CHINESE
- JAPANESE
- DANISH
- SWEDISH
- FINNISH
- NORWEGIAN
- RUSSIAN
- OTHERS➡

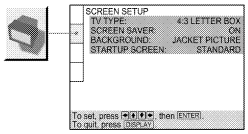
When you select "OTHERS➡," select and enter the language code from the list using the number buttons (page 82).
After you have made a selection, the language code (4 digits) is displayed.

* When you select "AUDIO FOLLOW," the language for the subtitles changes according to the language you selected for the sound track.

Settings for the Display (SCREEN SETUP) DVD VIDEO CD CD

"SCREEN SETUP" allows you to set the display according to the playback conditions.
The default settings are underlined.

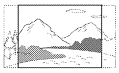
Select "SCREEN SETUP" in the setup display.



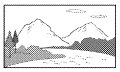
■ TV TYPE
Selects the aspect ratio of the TV to be connected.
- 4:3 LETTER BOX: select this when you connect a normal TV to the player. Displays a wide picture with bands on the upper and lower portions of the screen.
- 4:3 PAN SCAN: select this when you connect a normal TV to the player. Displays the wide picture on the whole screen automatically and cuts off the portions that do not fit.
- 16:9/4:3 WIDE MODE: select this when you connect a wide-screen TV to the player or when you connect a TV with the WIDE MODE function to the player (displays a wide picture with bands displayed on the upper and lower portions of the screen).

4:3 LETTER BOX

4:3 PAN SCAN



16:9



4:3 WIDE MODE

Note
Depending on the DVD, "4:3 LETTER BOX" may be selected automatically instead of "4:3 PAN SCAN" and vice versa.

■ SCREEN SAVER
Turns on and off the screen saver. If you turn on the screen saver, the screen saver image appears when you leave the player or the remote in pause or stop mode for 15 minutes, or when you play back a CD for more than 15 minutes. The screen saver will help prevent your display device from becoming damaged.
- ON: turns on the screen saver.
- OFF: turns off the screen saver.

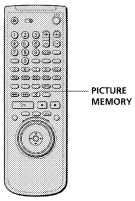
■ BACKGROUND
Selects the background color or picture on the TV screen in stop mode or while playing a CD.
- JACKET PICTURE: The jacket picture appears in the background, but only when the jacket picture is already recorded on the disc.
- PICTURE MEMORY: Your favorite picture appears in the background. For an explanation of how to store your favorite scene recorded on the disc for the background picture, see the following section "Storing a picture in memory."
- GRAPHICS: A preset picture stored in the player appears in the background.
- BLUE: The background color is blue.
- BLACK: The background color is black.

Note
If a disc which does not contain the jacket picture is played while "BACKGROUND" is set to "JACKET PICTURE," the picture stored in the player will automatically appear in the background.

■ STARTUP SCREEN
Selects the startup screen. The startup screen image you selected appears when you turn on the player.
- STANDARD: The standard startup screen in the player's memory appears.
- PICTURE MEMORY: Your favorite picture appears in the startup screen. For an explanation of how to store your favorite scene recorded on the disc for the startup screen, see the following section "Storing a picture in memory."
If you select PICTURE MEMORY before setting a picture in memory, the standard startup screen will appear.

Storing a picture in memory

During playback, when you find the scene to be stored in memory, press PICTURE MEMORY on the remote.
The picture is stored in memory.

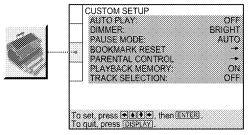


Notes
- The player can store only one scene in memory. The stored picture appears in both the background and the startup screen.
- Depending on the DVD, some scenes cannot be stored in memory when using the remote.
- When the picture is stored in memory by pressing PICTURE MEMORY, the picture stored before is erased.
- If you operate this player while the picture is being stored in memory, the player will fail to store the picture.

Custom Settings (CUSTOM SETUP)
DVD VIDEO CD CD

"CUSTOM SETUP" allows you to set the playback conditions.
The default settings are underlined.

Select "CUSTOM SETUP" in the setup display.



■ AUTO PLAY
Selects the Auto Play setting when you connect the AC power cord to the AC outlet.
- OFF: does not use "TIMER," "DEMO1" or "DEMO2" to start playback.
- TIMER: starts playing when the player is turned on, or at any time you want when connected to a timer (not supplied). Set the timer when the player is in standby mode (the power indicator lights up in red).
- DEMO1: starts playing the first demonstration automatically.
- DEMO2: starts playing the second demonstration automatically.

■ DIMMER
Adjusts the lighting of the front panel display.
- BRIGHT: makes the front panel display bright.
- DARK: makes the front panel display dark.
- OFF: turns off the lighting of the front panel display.

You also can adjust the lighting with the DIMMER button on the player.

■ PAUSE MODE (DVD only)
Selects the picture in pause mode.
- AUTO: A picture, including subjects that move dynamically, is output with no jitter. Normally select this position.
- FRAME: A picture including subjects that do not move dynamically is output with high resolution.

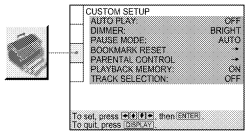
■ BOOKMARK RESET➡
Select "BOOKMARK RESET➡." The BOOKMARK RESET display appears. And then press ENTER to reset all bookmarks.

■ PARENTAL CONTROL➡
Sets a password and playback limitation level for DVDs with playback limitation for children.
The same password is used for both Parental Control and Custom Parental Control (page 49).
For details, see "Limiting Playback by Children (Parental Control)."

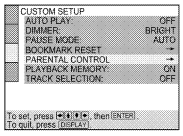
Limiting Playback by Children (Parental Control) DVD

Playback of some DVDs can be limited depending on the age of the users. The "Parental Control" function allows you to set a playback limitation level.

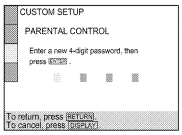
Select "CUSTOM SETUP" in the setup display.



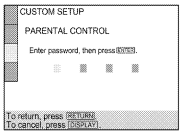
1 Select "PARENTAL CONTROL" using ↑/↓, then press ENTER.



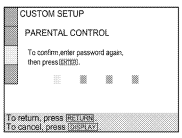
■ When you have not entered a password
The display for entering a password appears.


CUSTOM SETUP
PARENTAL CONTROL
Enter a new 4-digit password, then press ENTER.
To return, press RETURN.
To cancel, press DISPLAY.

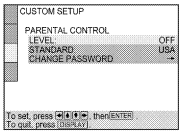
■ When you have already registered a password
The display for confirming the password appears. Skip Step 2.



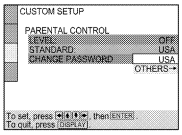
2 Enter a password in 4 digits using the number buttons, then press ENTER.
The digits change to asterisks (✱), and the display for confirming the password appears.


CUSTOM SETUP
PARENTAL CONTROL
To confirm, enter password again, then press ENTER.
To return, press RETURN.
To cancel, press DISPLAY.

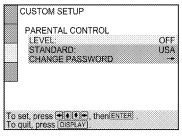
3 To confirm your password, enter it again using the number buttons, then press ENTER.
The display for setting the playback limitation level and changing the password appears.



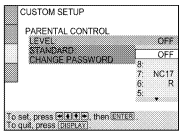
4 Select "STANDARD" using ↑/↓, then press ➡.



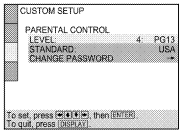
5 Select a geographic area as the playback limitation level standard using ↑/↓, then press ENTER.
When you select "OTHERS➡," select and enter the standard code in the table on the next page using the number buttons.



6 Select "LEVEL" using ↑/↓, then press ➡.



7 Select the level you want using ↑/↓, then press ENTER.



The lower the value, the more strict the limitation.

To return to the normal screen
Press DISPLAY.

To turn off the Parental Control function and play the DVD after entering your password
Set "LEVEL" to "OFF" in Step 7, then press ⊳.

To change the password

1 After Step 3, select "CHANGE PASSWORD➡" using ↑/↓, then press ➡ or ENTER.
The display for changing the password appears.
2 Follow Steps 2 and 3 to enter a new password.

Playing a disc which is blocked by the playback limitation level

1 Insert the disc and press ▷.
The PARENTAL CONTROL display appears.
2 Enter your 4-digit password using the number buttons, then press ENTER.
The player starts playback.
When you stop playing the DVD, the level returns to the original level.

If you forget your password

Enter the 6-digit number "199703" whenever the PARENTAL CONTROL display asks you for your password, then press ENTER. The display will ask you to enter a new 4-digit password.

Notes

- When you play DVDs which do not have the Parental Control function, playback cannot be limited on this player.
- If you do not set a password, you cannot change the settings for playback limitation.
- Depending on the DVD, you may be asked to change the Parental Control level while playing the disc. In this case, enter your password, then change the level.
When you stop playing the DVD, the level returns to the original level.
- The same password is used for both Parental Control and Custom Parental Control (page 49).

Standard	Code number
Argentina	2044
Australia	2047
Austria	2046
Belgium	2057
Brazil	2070
Canada	2079
Chile	2090
China	2092
Denmark	2115
Finland	2165
France	2174
Germany	2109
Hong Kong	2219
India	2248
Indonesia	2238
Italy	2254
Japan	2276
Korea	2304
Malaysia	2363
Mexico	2362
Netherlands	2376
New Zealand	2390
Norway	2379
Pakistan	2427
Philippines	2424
Portugal	2436
Russia	2489
Singapore	2501
Spain	2149
Sweden	2499
Switzerland	2086
Taiwan	2543
Thailand	2528
United Kingdom	2184

■ PLAYBACK MEMORY (DVD only)

The player can store the AUDIO, SUBTITLE and other settings of each disc for up to 301 slots (Playback Memory).
Set the Playback Memory function on or off.

- ON : stores the settings in memory when you eject the disc.
- OFF : does not store the settings in memory.

The following settings are stored in memory by the Playback Memory function.

– AUDIO (page 43)
– SUBTITLE (page 45)
– ANGLE (page 46)
– VES (page 47)

Notes

- The player can store the settings of up to 301 slots. When you have the player store a new disc in memory, the data for the old disc is erased.
- The Playback Memory settings are not effective for side B.
- Depending on the DVD, the information stored in the disc takes priority over the Playback Memory settings and the function does not work.
- Do not turn off the player by pressing ⏻. Doing so may cancel the settings. When you turn off the player, press ■ first to stop playback and then press I/⏻ on the remote. After the power indicator lights up in red and the player enters standby mode, press ⏻ on the player.

■ TRACK SELECTION

Gives the sound track which contains the highest number of channels priority when you play a DVD on which multiple audio formats (PCM, DTS or Dolby Digital format) are recorded.

- OFF : No priority given.
- AUTO : Priority given.

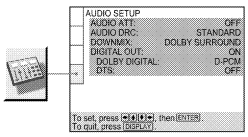
Notes

- When you set this item to "AUTO," the language may change depending on the "AUDIO" settings in "LANGUAGE SETUP." The "TRACK SELECTION" setting has higher priority than the "AUDIO" settings in "LANGUAGE SETUP" (page 63).
- If you set "DTS" in "AUDIO SETUP" to "OFF", the DTS sound track is not played even if you set this item to "AUTO" and the highest-numbered audio channel is recorded in DTS format.
- If PCM, DTS and Dolby Digital sound tracks have the same number of channels, the player selects PCM, DTS and Dolby Digital sound tracks in this order.
- Depending on the DVD, the audio channel with priority may be predetermined. In this case, you cannot give priority to the DTS or Dolby Digital format by selecting "AUTO."

Settings for the Sound (AUDIO SETUP)

"AUDIO SETUP" allows you to set the sound according to the playback conditions.
The default settings are underlined.

Select "AUDIO SETUP" in the setup display.



■ AUDIO ATT (attenuation)

If the playback sound is distorted, set this item to "ON." The player reduces the audio output level.
Selects the setting of the output from the AUDIO OUT (1, 2) connectors according to the audio equipment to be connected.

- OFF: turns off the audio attenuation. Normally select this position.
- ON: reduces the audio output level so that no sound distortion occurs. Select this when the playback sound from the built-in TV speakers is distorted.

Note

The setting does not affect the output from the DIGITAL OUT OPTICAL and COAXIAL connectors.

■ AUDIO DRC (Dynamic Range Control) (DVD only)

Makes the sound clear when the volume is turned down when playing a DVD. This function works only when you play a DVD which has the AUDIO DRC function. This affects the output from the DIGITAL OUT connectors only when "DOLBY DIGITAL" is set to "D-PCM" in "DIGITAL OUT," and it affects the output from the AUDIO OUT (1, 2) connectors.

- STANDARD: Normally select this position.
- TV MODE: makes the low sounds clear even if you turn the volume down. It is especially recommended when you listen to the sound using the speakers of the TV.
- WIDE RANGE: It gives you the feeling of being at a live performance. This function works only when you are playing a Dolby Digital disc. When you use high quality speakers, it is more effective.

Note

When you play DVDs without the AUDIO DRC function, there may be no effect on the sound.

■ DOWNMIX

Switches the mixing down methods when you play a DVD on which rear signal components such as LS, RS, or S are recorded in Dolby Digital format. For details on the rear signal components, see "Displaying the audio information of the disc" (page 44).
The "DOWNMIX" setting affects the following connectors:

– AUDIO OUT connectors
– DIGITAL OUT OPTICAL and COAXIAL connectors (when you set "DOLBY DIGITAL" to "D-PCM" in "AUDIO SETUP" in the setup display)

- DOLBY SURROUND: when the player is connected to an audio component that conforms to Dolby Surround (Pro Logic). The output signals which reproduce the Dolby Surround (Pro Logic) effect are mixed down to 2 channels.
- NORMAL: when the player is connected to an audio component that does not conform to Dolby Surround (Pro Logic). The signals without the Dolby Surround (Pro Logic) effect are output.

■ DIGITAL OUT

Selects output signals via the DIGITAL OUT OPTICAL and COAXIAL connectors.

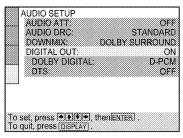
- ON: Normally select this position. When you select "ON," set "DOLBY DIGITAL" and "DTS." For details on setting these items, see "Setting the Digital Output Signal."
- OFF: when the player does not output the sound signals via the DIGITAL OUT OPTICAL and COAXIAL connectors, the influence of the digital circuit upon the analog circuit is at a minimum.

Notes

- When you play sound tracks with a 96 kHz sampling frequency, the output signals from the DIGITAL OUT (OPTICAL, COAXIAL) connectors are converted to 48 kHz (sampling frequency). The analog audio signals from the AUDIO OUT connectors are not affected by this setting and keep their original sampling frequency level.
- When you select "OFF," you cannot set "DOLBY DIGITAL" and "DTS."

Setting the Digital Output Signal

Switches the methods of outputting audio signals when you, connect 1. a digital component such as a receiver (amplifier) having a digital connector, 2. an audio component having a built-in decoder (Dolby Digital or DTS), 3. a DAT or MD via the DIGITAL OUT OPTICAL or COAXIAL connector using an optical or coaxial digital connecting cord. For connection details, see pages 10 and 12.
When you select "ON," set "DOLBY DIGITAL" and "DTS."



■ DOLBY DIGITAL

Selects the Dolby Digital signals to be output via the DIGITAL OUT OPTICAL and COAXIAL connectors. You cannot select this item when you set "DIGITAL OUT" to "OFF."

- D-PCM (Downmix PCM): when the player is connected to an audio component lacking a built-in Dolby Digital decoder. If you play Dolby Digital sound tracks, the output audio signals are mixed down to 2 channels. You can select whether the signals conform to Dolby Surround (Pro Logic) or not by making adjustments to the "DOWNMIX" item in "AUDIO SETUP."
- DOLBY DIGITAL: when the player is connected to an audio component with a built-in Dolby Digital decoder. If the player is connected to an audio component lacking a built-in Dolby Digital decoder, do not set this. Otherwise, when you play the Dolby Digital sound track, a loud noise or no sound will come out from the speakers, affecting your ears or causing the speakers to be damaged.

Note

When you select "D-PCM," set Virtual Enhanced Surround (VES) to "OFF." Otherwise, the player will not output signals from the DIGITAL OUT OPTICAL or COAXIAL connector.

■ DTS

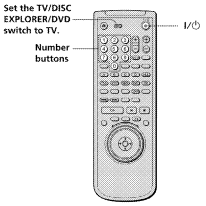
Selects the DTS signals to be output via the DIGITAL OUT OPTICAL and COAXIAL connectors. You cannot select this item when you set "DIGITAL OUT" to "OFF."

- OFF: when the player is connected to an audio component lacking a built-in DTS decoder.
- ON: when the player is connected to an audio component having a built-in DTS decoder.
If the player is connected to an audio component lacking a built-in DTS decoder, do not set this. Otherwise, when you play the DTS sound track, a loud noise or no sound will come out from the speakers, affecting your ears or causing the speakers to be damaged.

Controlling Your TV or AV Receiver (Amplifier) with the Supplied Remote

By adjusting the remote signal, you can control your TV or AV receiver (amplifier) with the supplied remote.

Controlling TVs with the remote



1 **Slide the TV/DISC EXPLORER/DVD switch to TV.**

2 **Hold down I/⏻, and enter your TV's manufacturer's code (see the table) using the number buttons.**

3 **Release I/⏻.**

Code numbers of controllable TVs

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

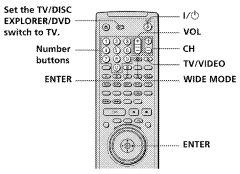
Manufacturer	Code number	Manufacturer	Code number
Sony (default)	01	Panasonic	06,19
Akai	04	Philco	03,04
AOC	04	Philips	08
Centurion	12	Pioneer	16
Coronado	03	Portland	03
Curtis-Mathes	12	Quasar	06,18
Daytron	12	Radio Shack	05,14
Emerson	03,04,14	RCA	04,10
Fisher	11	Sampo	12
General Electric	06, 10	Sanyo	11
Gold Star	03,04,17	Scott	12
Hitachi	02,03	Sears	07,10,11
J.C.Penney	04,12	Sharp	03,05,18
JVC	09	Sylvania	08,12
KMC	03	Teknika	03,08,14
Magnavox	03,08,12	Toshiba	07
Marantz	04,13	Wards	03,04,12
MGA/Mitsubishi	04,12,13,17	Yorx	12
NEC	04, 12	Zenith	15

Notes

- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote, the code number may be reset to the default setting. Reset the appropriate code number.

Controlling the TV

When you set the TV/DISC EXPLORER/DVD switch to TV, you can control your TV using the buttons below.



By pressing	You can
I/⏻	Turn the TV on or off
TV/VIDEO	Switch the TV's input source between the TV and other input sources
VOL	Adjust the volume of the TV
CH	Select the channel of the TV
WIDE MODE	Switch the wide picture on or off
Number buttons and ENTER	Select the channel of the TV

Note

Depending on the TV, you may not be able to control your TV or to use some of the buttons above.

Controlling AV receivers (amplifiers) with the remote

1 **Slide the TV/DISC EXPLORER/DVD switch to DVD.**

2 **Hold down I/⏻, and enter your AV receiver's manufacturer's code (see the table) using the number buttons.**

3 **Release I/⏻.**

Code numbers of controllable AV receivers (amplifier)

If more than one code number is listed, try entering them one at a time until you find the one that works with your AV receiver (amplifier).

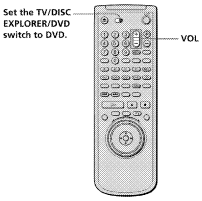
Manufacturer	Code number
Sony	91 (default), 89
Denon	84, 85, 86
Kenwood	92, 93
Onkyo	81, 82, 83
Pioneer	99
Sansui	87
Technics	97, 98
Yamaha	94, 95, 96

Notes

- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote, the code number may be reset to the default setting. Reset the appropriate code number.

Controlling the AV receiver (amplifier)

When you set the TV/DISC EXPLORER/DVD switch to DVD, you can change the volume of the AV receiver (amplifier) using VOL.



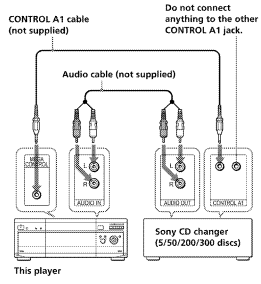
Note

Depending on the AV receiver (amplifier), you may not be able to control your AV receiver (amplifier).

Controlling the CD Changer (Mega Control)

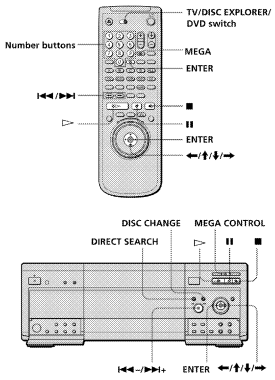
You can control a Sony CD changer of 5/50/200/300 discs connected to the MEGA CONTROL jack of the player.

Connecting the CD changer


CONTROL A1 cable (not supplied)
Do not connect anything to the other CONTROL A1 jack.
Audio cable (not supplied)
AUDIO IN
AUDIO OUT
CONTROL A1
Sony CD changer (5/50/200/300 discs)
This player

Controlling the CD changer

The controls indicated below are effective while the MEGA CONTROL button is lit.



1 **Set the command mode selector of the CD changer to "CD 3."**

2 **Set the TV/DISC EXPLORER/DVD switch on the remote to DISC EXPLORER or DVD.**

3 **Turn on the player and the CD changer.**

4 **Press MEGA CONTROL on the player or MEGA on the remote.**
The MEGA CONTROL button on the front panel lights up and the display shows the current disc number in the CD changer.

5 **Select the play mode you want on the CD changer.**

6 **Press ▷ on the player to start playing.**
Playback starts and the display shows the current disc and track numbers and the playing time of the track. While the MEGA CONTROL button on the front panel is lit, you can control the CD changer with the controls on the player as follows:

To	Operation
Select a disc during playback	Press the number button on the remote and ENTER, or ↑/↓ and ENTER, or turn the click shuttle slowly and press ENTER. Or, press DISC CHANGE to turn the indicator on followed by turning the I◀◀–/▶▶I+ dial and then pressing it.
Skip by 10 discs in continuous play mode	Press ←/→ and then press ENTER.
Stop	Press ■.
Pause	Press II.
Resume play after pause	Press II or ▷.
Go to the next track during playback	*On the player:* Press DIRECT SEARCH to turn it on and turn the I◀◀–/▶▶I+ dial clockwise. *On the remote:* Press ▶▶I.
Go back to the preceding track during playback	*On the player:* Press DIRECT SEARCH to turn it on and turn the I◀◀–/▶▶I+ dial counterclockwise *On the remote:* Press I◀◀.

To control the player again

Press MEGA CONTROL on the player or MEGA on the remote.
The MEGA CONTROL button on the player turns off and you can control the player.

Notes

- Connect only a Sony 5/50/200/300 CD changer to the MEGA CONTROL jack.
- You cannot locate a particular point on a CD's track using the controls on the player.
- Depending on the CD changer, some controls on the player may not operate the CD changer as they do the player.
- You cannot control the player when the MEGA CONTROL button on the front panel is lit.
- The player will not enter Resume Play after the MEGA CONTROL button on the front panel has been turned on and off.
- You cannot control the CD changer right after turning on the player or connecting the CD changer. Wait a few seconds until the player recognizes the CDs.
- When the MEGA CONTROL button is lit, you cannot use the Control Menu and Disc Explorer.

Additional Information

Troubleshooting

If you experience any of the following difficulties while using the player, use this troubleshooting guide to help remedy the problem. Should any problem persist, consult your nearest Sony dealer.

Power

The power is not turned on.
➡ Check that the AC power cord is connected securely.

Picture

There is no picture.
➡ Check that the player is connected securely.
➡ The video connecting cord is damaged. Replace it with a new one.
➡ Make sure you connect the player to the video input connector on the TV. (page 8)
➡ Make sure you turn on the TV.
➡ Make sure you select the video input on the TV so that you can view the pictures from the player.

Picture noise appears.
➡ Clean the disc.
➡ If the video signal from your DVD player has to go through your VCR to get to your TV, the copy-protection applied to some DVD programs could affect picture quality. If you still experience problems after checking your connections, please try connecting your DVD player directly to your TV's S-input, if your TV is equipped with this input. (page 8)

Even though you set the aspect ratio in "TV TYPE" in "SCREEN SETUP" of the setup display, the picture does not fill the screen.
➡ The aspect ratio is fixed on your DVD.

Sound

There is no sound.
➡ Check that the player is connected securely.
➡ The audio connecting cord is damaged. Replace it with a new one.
➡ Make sure you connect the player to the audio input connectors on the receiver (amplifier). (page 10)
➡ Make sure you turn on the TV and the receiver (amplifier).
➡ Make sure you select the appropriate input on the receiver (amplifier) so that you can listen to the sound from the player.
➡ The player is in pause mode or in Slow-motion Play mode. Press ▷ to return to normal play mode.
➡ The player is in fast forward or fast reverse mode. Press ▷ to return to normal play mode.
➡ If you use the DIGITAL OUT connectors, set "DIGITAL OUT" to "ON" in the setup display. Otherwise no sound will come from the DIGITAL OUT connectors. (page 70)
➡ You selected a VES mode other than "OFF" in the Control Menu display when you connected the component via the DIGITAL OUT OPTICAL or COAXIAL connector. Set "VES" to "OFF" in the Control Menu display. (page 47)
➡ When you play DTS sound tracks, sound will only come out from the DIGITAL OUT OPTICAL or COAXIAL connector. (page 20)

Sound is noisy.
➡ Clean the disc.
➡ When you play a CD with DTS sound tracks, noise will come from any connector other than the DIGITAL OUT OPTICAL or COAXIAL connector. (page 20)

Sound distortion occurs.
➡ In the setup display, set "AUDIO ATT" in "AUDIO SETUP" to "ON." (page 70)

The sound loses its stereo effect when you play a VIDEO CD or a CD.
➡ Set "AUDIO" to "STEREO" in the Control Menu display. (page 43)
➡ Make sure you connect the player correctly. (pages 8, 10, 12)

The surround effect is difficult to hear when you are playing a Dolby Digital or DTS sound track.
➡ Depending on the DVD, the output signal may not be the entire 5.1 channels. It may be monaural or stereo even if the sound track is recorded in Dolby Digital or DTS format.

Operation

The remote does not function.
➡ Remove any obstacles between the remote and the player.
➡ Use the remote near the player.
➡ Point the remote at the remote sensor ▣ on the player.
➡ Replace all of the batteries in the remote with new ones if they are weak.
➡ The TV/DISC EXPLORER/DVD switch is not in the correct position.

The disc does not play.
➡ There is no disc inside ("Insert disc." appears on the TV screen).
Insert a disc.
➡ Insert the disc correctly with the playback side facing left into the disc slot.
➡ Clean the disc.
➡ The player cannot play CD-ROMs, etc. (page 5)
Insert a DVD, a VIDEO CD, or a CD.
➡ Check the region code of the DVD. (page 4)
➡ Moisture has condensed inside the player. Remove the disc and leave the player turned on for about half an hour. (page 6)
➡ The selected disc is not included in the current folder.

The player does not play from the beginning when playing a disc.
➡ Program Play, Shuffle Play, Repeat Play or A-B Repeat Play has been selected. Press CLEAR. (pages 52 through 57)
➡ Resume Play has been selected.
Press ■ on the front panel or on the remote before you start playing. (page 23)
➡ A title menu or a DVD menu automatically appears on the TV screen when you play your DVD, or a setup display automatically appears on the TV screen when you play your VIDEO CD with PBC functions.

The player starts playing the disc automatically.
➡ The DVD features the auto playback function.
➡ "AUTO PLAY" in "CUSTOM SETUP" is set to "TIMER." (page 65)

Playback stops automatically.
➡ The disc may contain an auto pause signal. While playing such a disc, the player stops playback at the signal.

You cannot perform some functions such as Stop, Search, Slow-motion Play, Repeat Play, Shuffle Play or Program Play.
➡ Depending on the disc, you may not be able to do some of the operations above.

Messages do not appear on the TV screen in the language you want.
➡ In the setup display, select the desired language for the on-screen display in "OSD" under "LANGUAGE SETUP." (page 63)

The language for the sound track cannot be changed when you play a DVD.
➡ Multilingual tracks are not recorded on the DVD.
➡ Changing the language for the track is prohibited on the DVD.

The subtitle language cannot be changed when you play a DVD.
➡ Multilingual subtitles are not recorded on the DVD.
➡ Changing the language for the subtitles is prohibited on the DVD.

The subtitles cannot be turned off when you play a DVD.
➡ Depending on the DVD, you may not be able to turn the subtitles off.

The angles cannot be changed when you play a DVD.
➡ Multi-angles are not recorded on the DVD.
➡ Change the angles when "ANGLE" appears on the front panel display. (page 26)
➡ Changing the angles is prohibited on the DVD.

The player does not operate properly.
➡ Static electricity, etc., may affect the player's operation.
Press ⏻ on the player to turn the player off and then on again.

Nothing is displayed on the front panel display.
➡ Press DIMMER on the player. (page 26)
➡ In the set up display, "DIMMER" in "CUSTOM SETUP" is set to "OFF."
Set "DIMMER" to "BRIGHT" or "DARK." (page 65)

The sound does not come from the CD changer connected using the CONTROL A1 cable
➡ Turn on the player.
➡ Press the MEGA CONTROL button on the front panel. (page 74)

5 numbers or letters are displayed on the screen and on the front panel display.
➡ The self-diagnosis function was activated. See the table on page 79.

The front cover does not open and "LOCKED" is displayed on the front panel display.
➡ Contact your Sony dealer or local authorized Sony service facility.

The FLIP button does not operate.
➡ The disc you are trying to flip does not have a side B.

Self-diagnosis function

When the self-diagnosis function activates to prevent the player from malfunctioning, a five-character service number (combination of a letter and digits) flashes on the screen and on the front panel display. In this case, check the following table.

First three characters	Cause and/or Corrective Action
C13	• The disc is dirty. ➡ Clean the disc with a cleaning cloth. (page 6) • The disc is not facing the correct direction. ➡ Place the disc in the slot so that the playing side is facing left.
C31	• The front cover will not open or close all the way. ➡ Remove any objects that may be blocking the movement of the front cover.
Exx (xx is any number)	• To prevent a malfunction, the player has performed the self-diagnosis function. The front cover automatically open and the player enters standby mode. ➡ When you contact your Sony dealer or local authorized Sony service facility, remove all of the discs in the player and give the 5-character service number. (example: E:61:10)

Glossary

Bit rate (page 48)
Value indicating the amount of video data compressed in a DVD per second. The unit is Mbps (Mega bit per second). 1 Mbps indicates that the data per second is 1,000,000 bits. The higher the bit rate, the larger the amount of data. However, this does not always mean that you can get higher quality pictures.

Chapter (page 5)
Sections of a picture or a music piece on a DVD that are smaller than titles. A title is composed of several chapters. Each chapter is assigned a chapter number enabling you to locate the chapter you want.

Digital Cinema Sound (DCS) (page 47)
The general name of technology that Sony developed to enjoy surround sound in a home. It simulates the sound of a movie editing studio instead of the usual concert hall so that you can enjoy the surround sound of a movie theater in the comfort of your own home. The VES (Virtual Enhanced Surround) system contained in DCS programs can create the sound image of virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers.

Dolby Digital (pages 10, 71)
Digital audio compression technology developed by Dolby Laboratories. This technology conforms to 5.1-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. Dolby Digital provides the same 5.1 discrete channels of high quality digital audio found in Dolby Digital cinema audio systems. Good channel separation is realized because all of the channel data is recorded discretely and processed in digital.

Dolby Pro Logic (page 71)
Audio signal processing technology that Dolby Laboratories developed for surround sound. When the input signal contains a surround component, the Pro Logic process outputs the front, center and rear signals. The rear channel is monaural.

DTS (pages 12, 71)
Digital audio compression technology that Digital Theater Systems, Inc. developed. This technology conforms to 5.1-channel surround. The rear channel is stereo and there is a discrete subwoofer channel in this format. DTS provides the same 5.1 discrete channels of high quality digital audio. Good channel separation is realized because all of the channel data is recorded discretely and processed in digital.

DVD (page 4)
A disc that contains up to 8 hours of moving pictures even though its diameter is the same as a CD.
The data capacity of a single-layer and single-sided DVD is 4.7 GB (Giga Byte) which is 7 times that of a CD. The data capacity of a dual-layer and single-sided DVD is 8.5 GB, a single-layer and double-sided DVD is 9.4 GB, and a dual-layer and double-sided DVD is 17 GB.
The picture data uses the MPEG 2 format, one of the worldwide standards of digital compression technology. The picture data is compressed to about 1/40 of its original size. The DVD also uses a variable rate coding technology that changes the data to be allocated according to the status of the picture.
Audio data is recorded in Dolby Digital as well as in PCM, allowing you to enjoy a more real audio presence. Furthermore, various advanced functions such as the multi-angle, multilingual, and Parental Control functions are provided with the DVD.

Multi-angle function (page 46)
Various angles for the scene (viewpoints of the video camera) are recorded on some DVDs.

Multilingual function (pages 14, 45, 63)
Several languages for the audio track or subtitles in a picture are recorded on some DVDs.

Parental Control (page 66)
A function of the DVD used to limit playback of the disc according to the age of the user and the limitation level in each country. The limitation varies from disc to disc; when it is activated, playback is completely prohibited, violent scenes are skipped or replaced with other scenes, and so on.

Playback Control (PBC) (page 25)
Signals encoded on VIDEO CDs (Version 2.0) to control playback.
By using menus recorded on VIDEO CDs with PBC functions, you can enjoy playing simple interactive programs, programs with search functions, and so on.

Title (page 5)
The longest section of a picture or a music piece on a DVD; a movie, etc., for a picture piece on video software; or an album, etc., for a music piece on audio software. Each title is assigned a title number enabling you to locate the title you want.

Track (page 5)
Sections of a picture or a music piece on a CD or VIDEO CD. Each track is assigned a track number enabling you to locate the track you want.

VIDEO CD (page 4)
A compact disc that contains moving pictures.
The picture data uses the MPEG 1 format, one of the worldwide standards of digital compression technology. The picture data is compressed to about 1/140 of its original size. Consequently, a 12 cm VIDEO CD can contain up to 74 minutes of moving pictures.
VIDEO CDs also contain compact audio data. Sounds outside the range of human hearing are compressed while the sounds we can hear are not compressed. VIDEO CDs can hold 6 times the audio information of conventional audio CDs.
There are 2 versions of VIDEO CDs.
- Version 1.1: You can play only moving pictures and sounds.
- Version 2.0: You can play high-resolution still pictures and enjoy PBC functions.

This player conforms to both versions.

Language Code List

For details, see pages 45, 63.

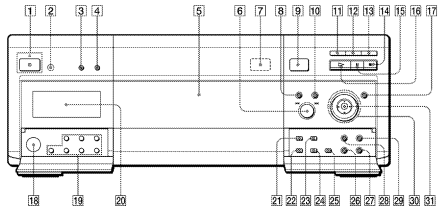
The language spellings conform to the ISO 639: 1988 (E/F) standard.

Code	Language	Code	Language	Code	Language	Code	Language
1027	Afar	1186	Scots Gaelic	1350	Malayalam	1513	Siswati
1028	Abkhazian	1194	Galician	1352	Mongolian	1514	Sesotho
1032	Afrikaans	1196	Guarani	1353	Moldavian	1515	Sundanese
1039	Amharic	1203	Gujarati	1356	Marathi	1516	Swedish
1044	Arabic	1209	Hausa	1357	Malay	1517	Swahili
1045	Assamese	1217	Hindi	1358	Maltese	1521	Tamil
1051	Aymara	1226	Croatian	1363	Burmese	1525	Telugu
1052	Azerbaijani	1229	Hungarian	1365	Nauru	1527	Tajik
1053	Bashkir	1233	Armenian	1369	Nepali	1528	Thai
1057	Byelorussian	1235	Interlingua	1376	Dutch	1529	Tigrinya
1059	Bulgarian	1239	Interlingue	1379	Norwegian	1531	Turkmen
1060	Bihari	1245	Inupiak	1393	Occitan	1532	Tagalog
1061	Bislama	1248	Indonesian	1403	(Afan) Oromo	1534	Setswana
1066	Bengali; Bangla	1253	Icelandic	1408	Oriya	1535	Tonga
1067	Tibetan	1254	Italian	1417	Punjabi	1538	Turkish
1070	Breton	1257	Hebrew	1428	Polish	1539	Tsonga
1079	Catalan	1261	Japanese	1435	Pashto; Pushto	1540	Tatar
1093	Corsican	1269	Yiddish	1436	Portuguese	1543	Twi
1097	Czech	1283	Javanese	1463	Quechua	1557	Ukrainian
1103	Welsh	1287	Georgian	1481	Rhaeto-Romance	1564	Urdu
1105	Danish	1297	Kazakh	1482	Kirundi	1572	Uzbek
1109	German	1298	Greenlandic	1483	Romanian	1581	Vietnamese
1130	Bhutani	1299	Cambodian	1489	Russian	1587	Volapük
1142	Greek	1300	Kannada	1491	Kinyarwanda	1613	Wolof
1144	English	1301	Korean	1495	Sanskrit	1632	Xhosa
1145	Esperanto	1305	Kashmiri	1498	Sindhi	1665	Yoruba
1149	Spanish	1307	Kurdish	1501	Sangho	1684	Chinese
1150	Estonian	1311	Kirghiz	1502	Serbo-Croatian	1697	Zulu
1151	Basque	1313	Latin	1503	Singhalese	1703	Not specified
1157	Persian	1326	Lingala	1505	Slovak		
1165	Finnish	1327	Laothian	1506	Slovenian		
1166	Fiji	1332	Lithuanian	1507	Samoan		
1171	Faroese	1334	Latvian; Lettish	1508	Shona		
1174	French	1345	Malagasy	1509	Somali		
1181	Frisian	1347	Maori	1511	Albanian		
1183	Irish	1349	Macedonian	1512	Serbian		

Index to Parts and Controls

Refer to the pages indicated in parentheses for details.

Front Panel

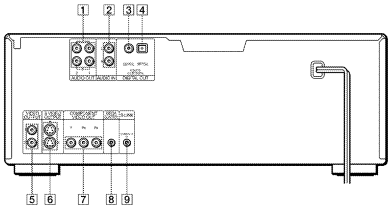


1 **⏻ (power) button and indicator (19)**
Disconnects the power of the player or places the player in standby mode.
2 **(remote sensor) (7)**
Accepts the remote control signals.
3 **DIMMER button and indicator (26)**
Press to change the brightness of the front panel display and the indicators on the front panel. The DIMMER indicator lights up when the front panel is off.
4 **VES button and indicator (47)**
Press to select the desired "VES" item.
The indicator lights up for every selected item except "OFF."
5 **Disc compartment (16)**
Insert discs in the disc slots.
6 **⏮–/⏭+ dial (16, 19, 20)**
When the DIRECT SEARCH indicator is lit, turn to go to the next chapter or track or to go back to the previous chapter or track.
When the DISC CHANGE indicator is lit, turn to rotate the disc slots or select disc.
7 **⏏EJECT button (18)**
Press to remove the disc from the disc slot.
8 **DIRECT SEARCH button and indicator (20)**
Press to use the ⏮–/⏭+ dial to locate the chapter or track.
9 **OPEN/CLOSE button (16)**
Opens or closes the front cover.
10 **DISC CHANGE button and indicator (16, 19)**
Press to use the ⏮–/⏭+ dial to rotate the disc slots or select disc.
11 **EASY PLAY button and indicator (17)**
Press to play the EASY PLAY disc or bring the EASY PLAY slot to the loading position.
12 **MEGA CONTROL button and indicator (74)**
Press to control the connected CD changer.
13 **FLIP button and indicator (21)**
Press to turn over the disc.
14 **■ (stop) button (20, 23)**
Stops playing a disc.
15 **⏸ (pause) button (20)**
Pauses playing a disc.
16 **▷ (play) button (19)**
Plays a disc.
17 **JOG button and indicator (22)**
Press to play a disc frame by frame.
18 **KEYBOARD jack (34)**
Connect a keyboard to label the discs.
19 **FOLDER buttons (29)**
Selects a disc folder.
20 **Front Panel Display (26)**
Indicates the playing time, etc.
21 **REPEAT button (56)**
Each time you press this button, the "REPEAT" setting changes.
22 **LOAD button (28)**
Reads the information of the discs loaded in sequence.
23 **SHUFFLE button (55)**
Each time you press this button, the "SHUFFLE" setting changes.

continued to the next page

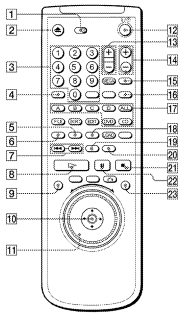
24 **TIME/TEXT button (26, 41, 43)**
Displays the playing time of the disc, etc., on the front panel display.
25 **1/ALL DISCS button (51)**
Selects 1 DISC or ALL DISCS play mode.
26 **DISPLAY button (37)**
Displays the Control Menu display on the TV screen to set or adjust the Control Menu items.
27 **↶RETURN button (25, 29, 38)**
Press to return to the previously selected screen, etc.
28 **TITLE button (24)**
Displays the title menu on the TV screen.
29 **DVD MENU button (25)**
Displays the DVD menu on the TV screen.
30 **Click shuttle (22)**
Changes the playback speed.
31 **←/↑/↓/→/ENTER button**
Selects and executes the items or settings.

Rear Panel

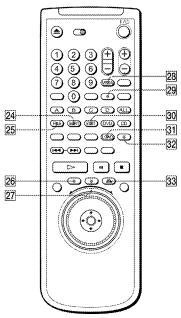


1 **AUDIO OUT R (right)/L (left) 1/2 connectors (8, 10)**
Connect to the audio input connector on your TV or receiver (amplifier).
2 **AUDIO IN (L, R) connectors (74)**
Connect to the audio output on a Sony CD changer of 5/50/200/300 discs.
3 **DIGITAL OUT COAXIAL connector (10, 13)**
Connect to an audio component using a coaxial digital connecting cord.
4 **DIGITAL OUT OPTICAL connector (10, 13)**
Connect to an audio component using an optical digital connecting cord. Take off the cap.
5 **VIDEO OUTPUT 1/2 connectors (8)**
Connect to the video input connector on your TV or monitor.
6 **S VIDEO OUTPUT 1/2 connectors (8, 10, 13)**
Connect to the S video input connector on your TV or monitor.
7 **COMPONENT VIDEO OUT connectors (9)**
Connects to a monitor or projector having component video input connectors (Y, Pb, Pr) that conform to output signals from the player.
8 **MEGA CONTROL connector (74)**
Connect to the control connector on a Sony CD changer of 5/50/200/300 discs.
9 **S-LINK (CONTROL S IN) connector (8)**
Connect to the S-LINK (CONTROL S) connector on an external component.

Remote



1 **TV/DISC EXPLORER/DVD switch (28, 72, 73)**
Selects to control the player, the Disc Explorer or the TV with the remote.
2 **⏏OPEN/CLOSE button (20)**
Opens or closes the front cover.
3 **Number/ENTER buttons**
Selects and executes the items or settings.
4 **CLEAR button (53 through 57)**
Press to return to continuous play, etc.
5 **PROGRAM button (53)**
Displays the "PROGRAM" display on the TV screen.
6 **SHUFFLE button (54)**
Each time you press this button, the "SHUFFLE" setting changes.
7 **I◄◄/►►IPREV/NEXT (previous/next) buttons (20)**
Press to go to the next chapter or track, or to go back to the previous chapter or track.
8 **▷PLAY button (19)**
Plays a disc.
9 **DISPLAY button (37)**
Displays the Control Menu display on the TV screen to set or adjust the Control Menu items.
10 **←/↑/↓/→/ENTER buttons**
Selects and executes the items or settings.
11 **Click shuttle (22, 32)**
Changes the playback speed, or selects characters.
12 **I/⏻ (on/standby) button (19)**
Press to turn on the player or place it in standby mode after power is connected by pressing ⏻ on the player.
13 **VOL +/– buttons (73)**
When 1 is set to DISC EXPLORER or DVD, controls the AV receiver (amplifier) volume.
When 1 is set to TV, controls the TV volume.
14 **CH/DISC SKIP +/– buttons (20, 73)**
When 1 is set to DISC EXPLORER or DVD, searches the discs in the folder (DISC SKIP).
When 1 is set to TV, changes the TV channel (CH).
15 **TV/VIDEO button (73)**
Switches the TV's input.
16 **FLIP button (21)**
Press to turn over the disc.
17 **FOLDER buttons (29)**
Selects a disc folder.
18 **REPEAT button (56)**
Each time you press this button, the "REPEAT" setting changes.
19 **PICTURE MEMORY button (65)**
Press to store a picture in memory.
20 **BOOKMARK button (59)**
Press to set a bookmark.
21 **■STOP button (20, 23)**
Stops playing a disc.
22 **❚❚PAUSE button (20)**
Pauses playing a disc.
23 **JOG button and indicator (22)**
Press to play a disc frame by frame.



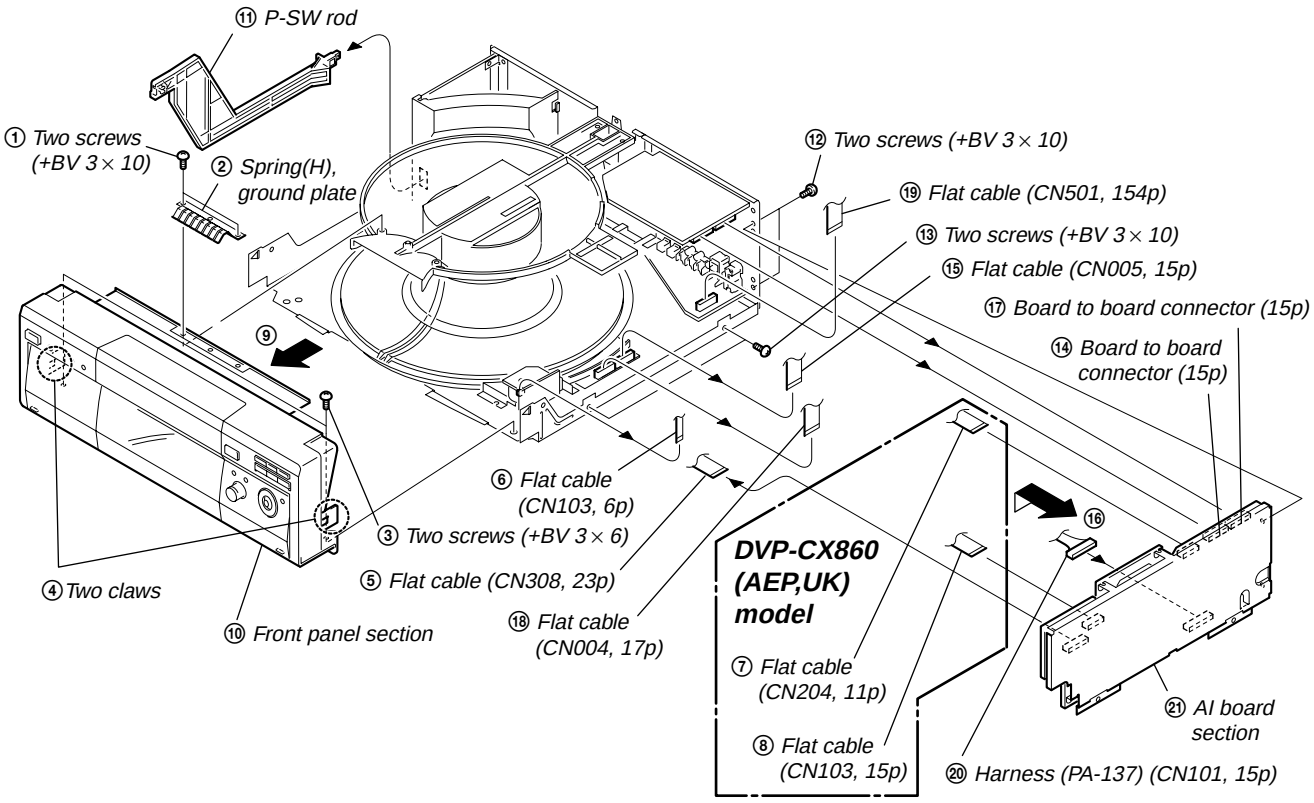
24 **ANGLE/SORT button (35, 46)**
When 1 is set to DVD or TV, changes the angles when playing a DVD (ANGLE).
When 1 is set to DISC EXPLORER, enters the SORT mode (SORT).
25 **AUDIO/FILE button (30, 44)**
When 1 is set to DVD or TV, changes the sound while playing a DVD or VIDEO CD (AUDIO).
When 1 is set to DISC EXPLORER, enters the FILE mode (FILE).
26 **TITLE button (24)**
Displays the title menu on the TV screen.
27 **DVD MENU button (25)**
Displays the DVD menu on the TV screen.
28 **WIDE MODE/MEGA button (73, 74)**
When 1 is set to TV, switches the wide picture on or off (WIDE MODE).
When 1 is set to DVD or DISC EXPLORER, press to control the connected CD changer (MEGA).
29 **TIME/TEXT button (26, 41, 43)**
Displays the playing time of the disc, etc., on the front panel display.
30 **SUBTITLE/EDIT button (32, 45)**
When 1 is set to DVD or TV, displays the SUBTITLE display on the TV screen (SUBTITLE).
When 1 is set to DISC EXPLORER, enters the EDIT mode to label the disc (EDIT).
31 **1/ALL DISCS/LOAD button (28, 51)**
When 1 is set to DVD or TV, selects 1 DISC or ALL DISCS play mode (1/ALL DISCS).
When 1 is set to DISC EXPLORER, reads the information of the discs loaded in sequence (LOAD).
32 **EASY PLAY button (17)**
Press to play the EASY PLAY disc or bring the EASY PLAY slot to the loading position.
33 **↶RETURN button (25, 29, 38)**
Press to return to the previously selected screen, etc.

MEMO

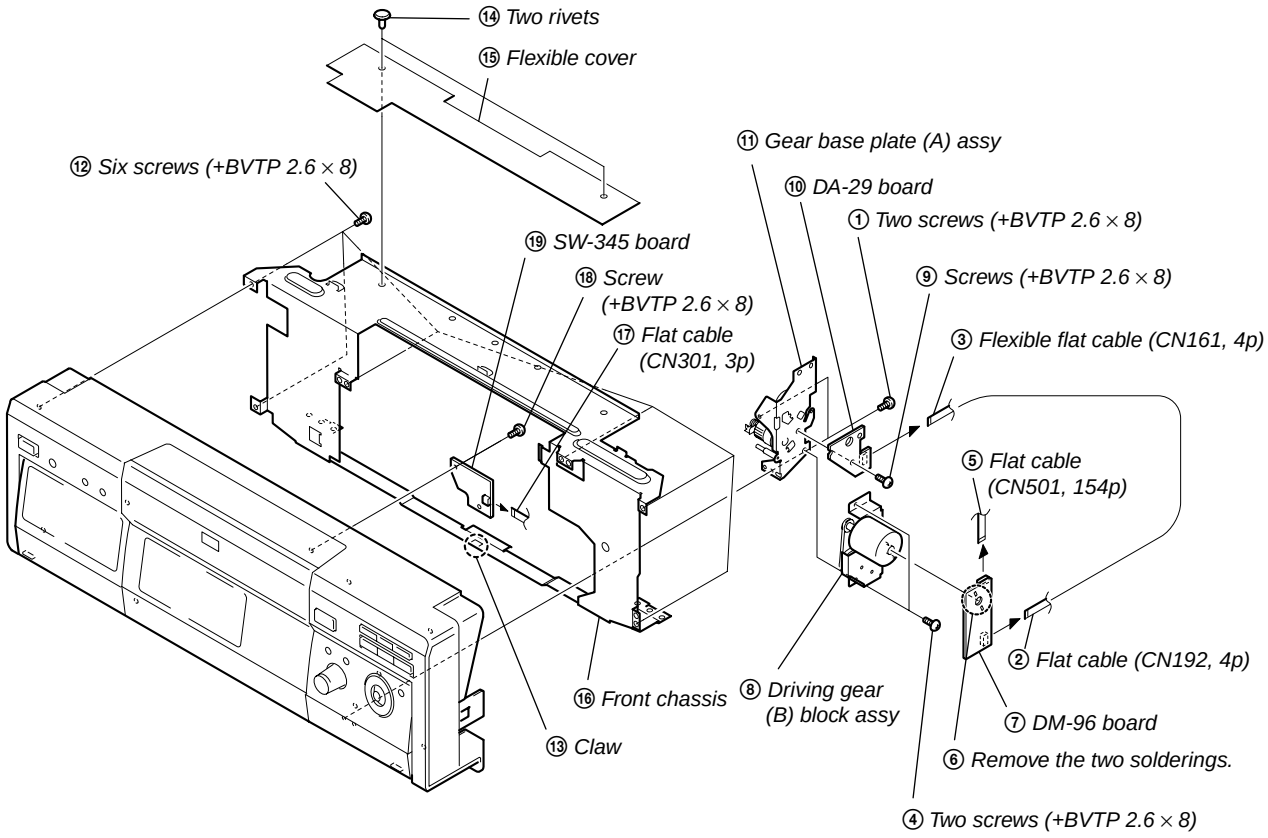
SECTION 2
DISASSEMBLY

NOTE: Follow the disassembly procedure in the numerical order given.

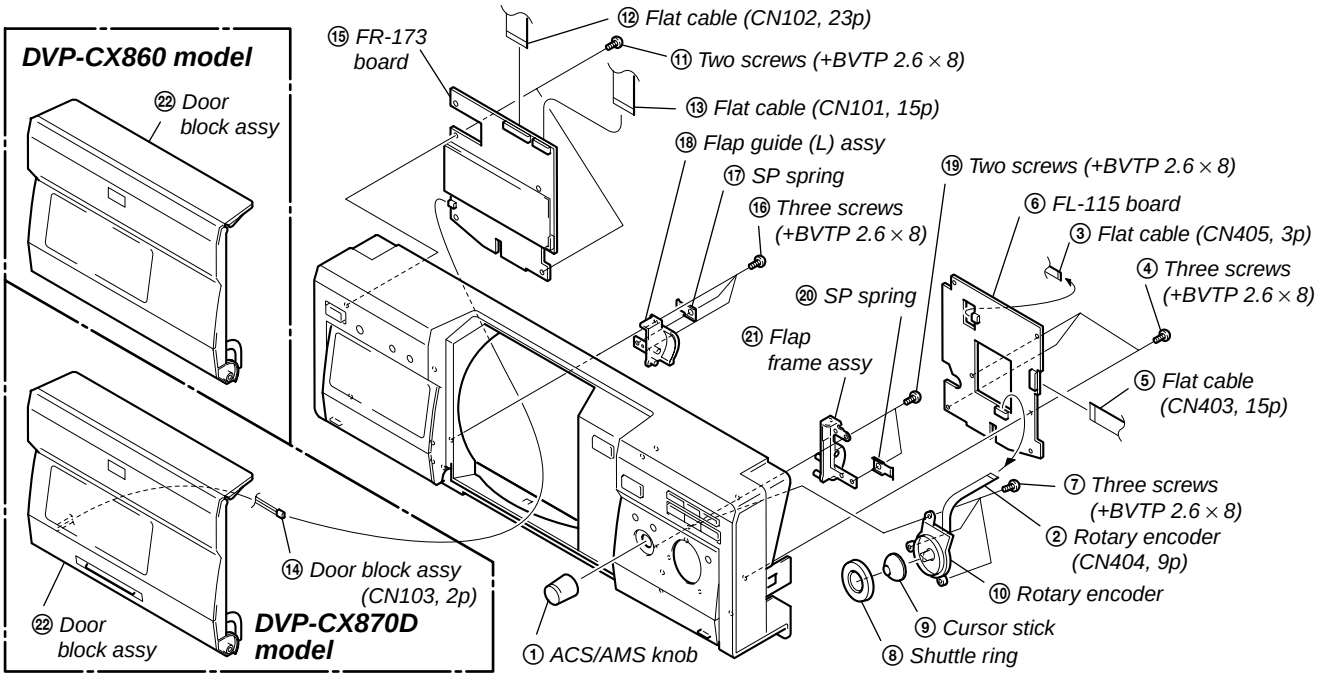
2-1. OVERALL


⑪ P-SW rod
① Two screws (+BV 3 × 10)
② Spring(H), ground plate
⑫ Two screws (+BV 3 × 10)
⑲ Flat cable (CN501, 154p)
⑬ Two screws (+BV 3 × 10)
⑮ Flat cable (CN005, 15p)
⑰ Board to board connector (15p)
⑭ Board to board connector (15p)
⑨
⑥ Flat cable (CN103, 6p)
③ Two screws (+BV 3 × 6)
⑤ Flat cable (CN308, 23p)
④ Two claws
⑩ Front panel section
⑱ Flat cable (CN004, 17p)
DVP-CX860 (AEP,UK) model
⑦ Flat cable (CN204, 11p)
⑧ Flat cable (CN103, 15p)
⑯
㉑ AI board section
⑳ Harness (PA-137) (CN101, 15p)

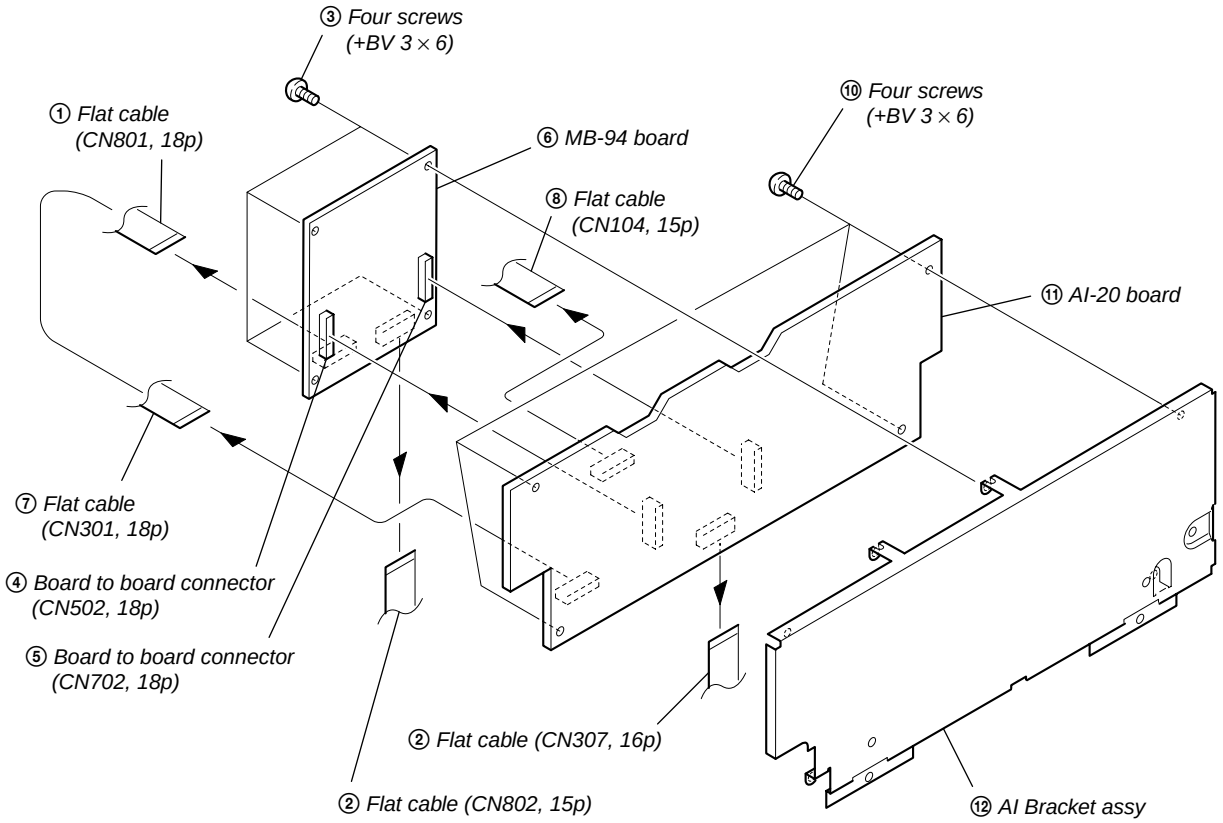
2-2. FRONT PANEL-1


⑭ Two rivets
⑮ Flexible cover
⑫ Six screws (+BVTP 2.6 × 8)
⑪ Gear base plate (A) assy
⑩ DA-29 board
① Two screws (+BVTP 2.6 × 8)
⑲ SW-345 board
⑨ Screws (+BVTP 2.6 × 8)
⑱ Screw (+BVTP 2.6 × 8)
⑰ Flat cable (CN301, 3p)
③ Flexible flat cable (CN161, 4p)
⑤ Flat cable (CN501, 154p)
② Flat cable (CN192, 4p)
⑯ Front chassis
⑧ Driving gear (B) block assy
⑦ DM-96 board
⑬ Claw
⑥ Remove the two solderings.
④ Two screws (+BVTP 2.6 × 8)

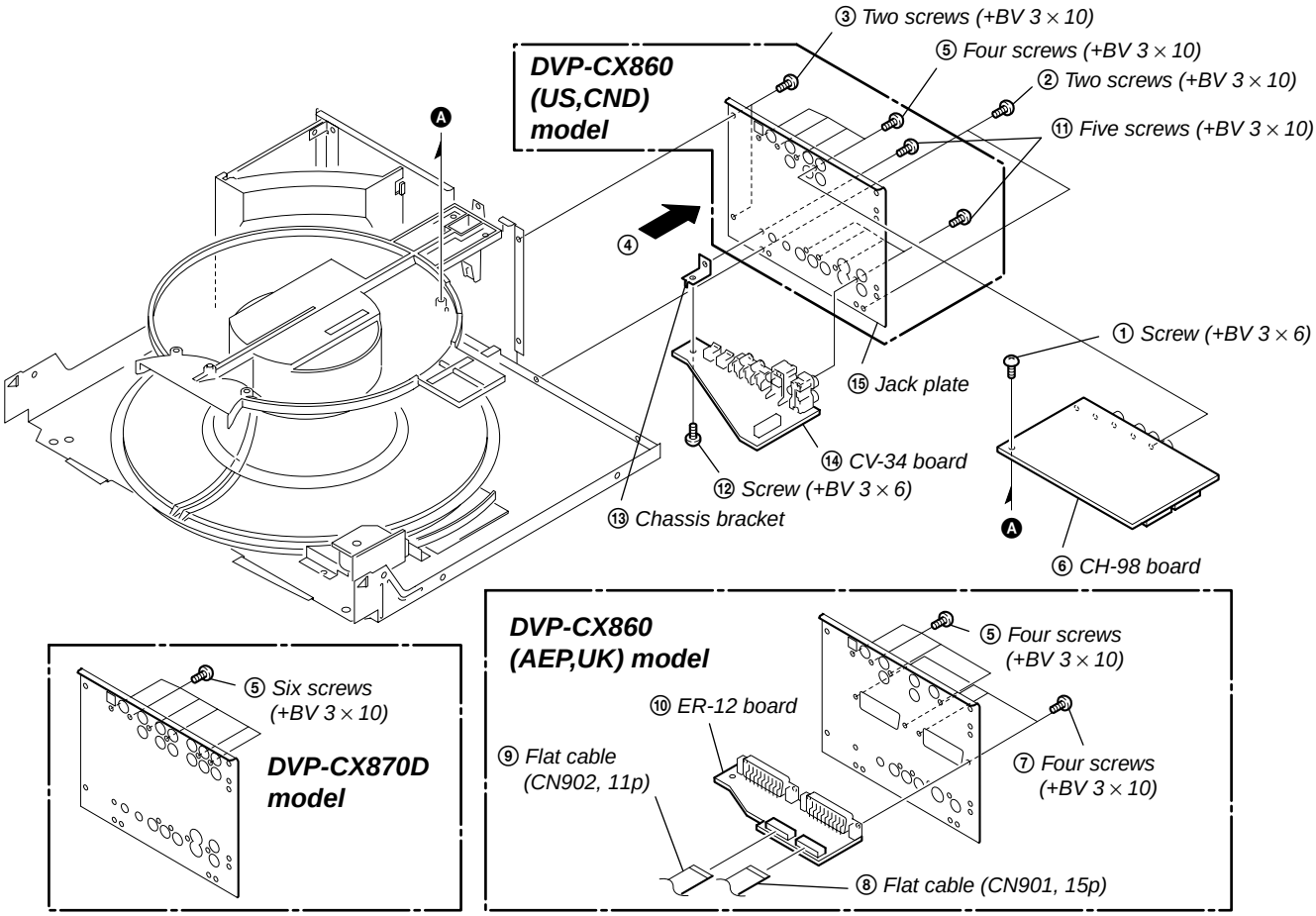
2-3. FRONT PANEL-2


DVP-CX860 model
⑫ Flat cable (CN102, 23p)
⑮ FR-173 board
⑪ Two screws (+BVTP 2.6 × 8)
⑬ Flat cable (CN101, 15p)
⑱ Flap guide (L) assy
⑰ SP spring
⑲ Two screws (+BVTP 2.6 × 8)
⑯ Three screws (+BVTP 2.6 × 8)
⑥ FL-115 board
③ Flat cable (CN405, 3p)
④ Three screws (+BVTP 2.6 × 8)
⑳ SP spring
㉒ Door block assy
㉑ Flap frame assy
⑤ Flat cable (CN403, 15p)
⑦ Three screws (+BVTP 2.6 × 8)
② Rotary encoder (CN404, 9p)
⑭ Door block assy (CN103, 2p)
⑩ Rotary encoder
㉒ Door block assy
DVP-CX870D model
⑨ Cursor stick
① ACS/AMS knob
⑧ Shuttle ring

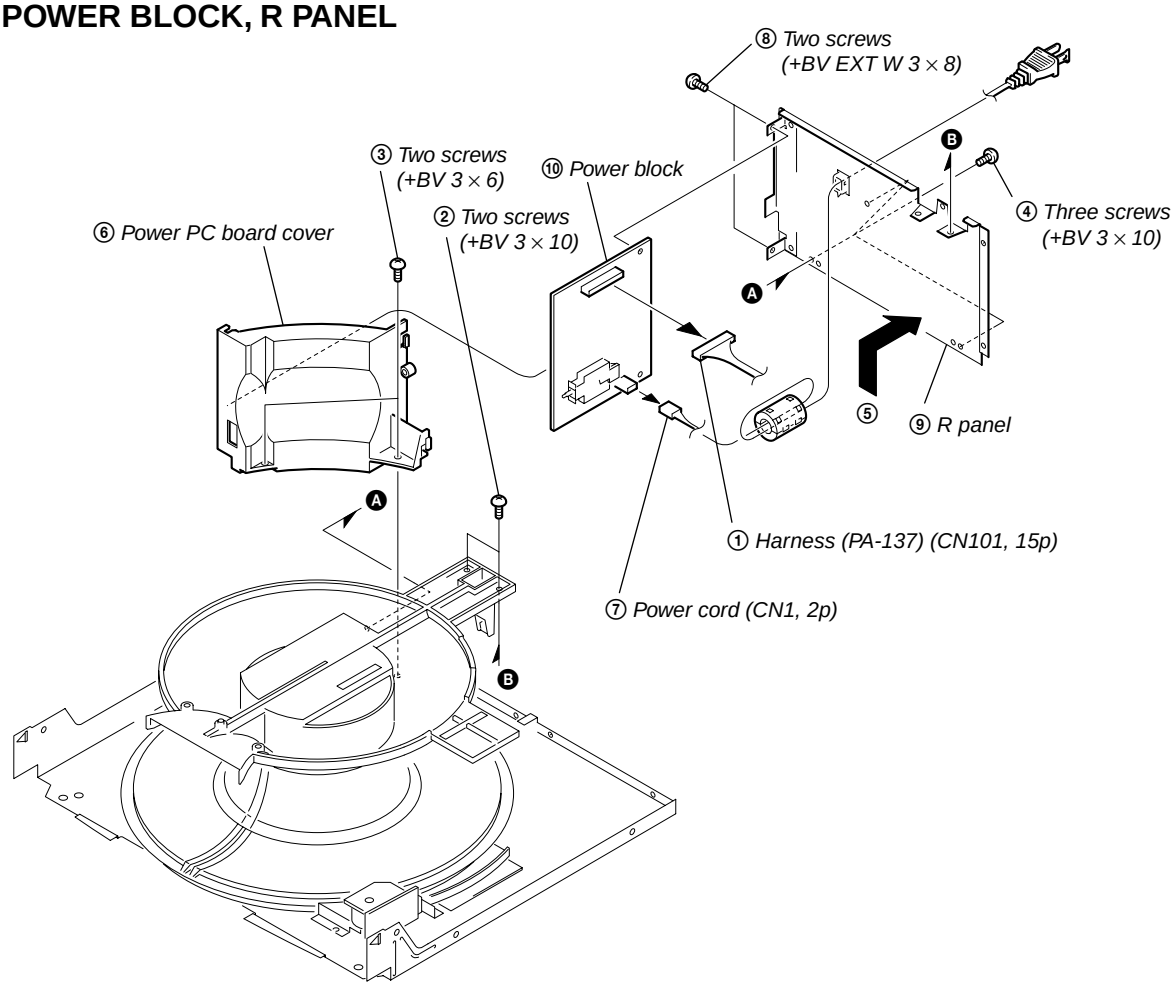
2-4. AI-20, MB-94 BOARDS


③ Four screws (+BV 3 × 6)
⑩ Four screws (+BV 3 × 6)
① Flat cable (CN801, 18p)
⑥ MB-94 board
⑧ Flat cable (CN104, 15p)
⑪ AI-20 board
⑦ Flat cable (CN301, 18p)
④ Board to board connector (CN502, 18p)
⑤ Board to board connector (CN702, 18p)
② Flat cable (CN307, 16p)
② Flat cable (CN802, 15p)
⑫ AI Bracket assy

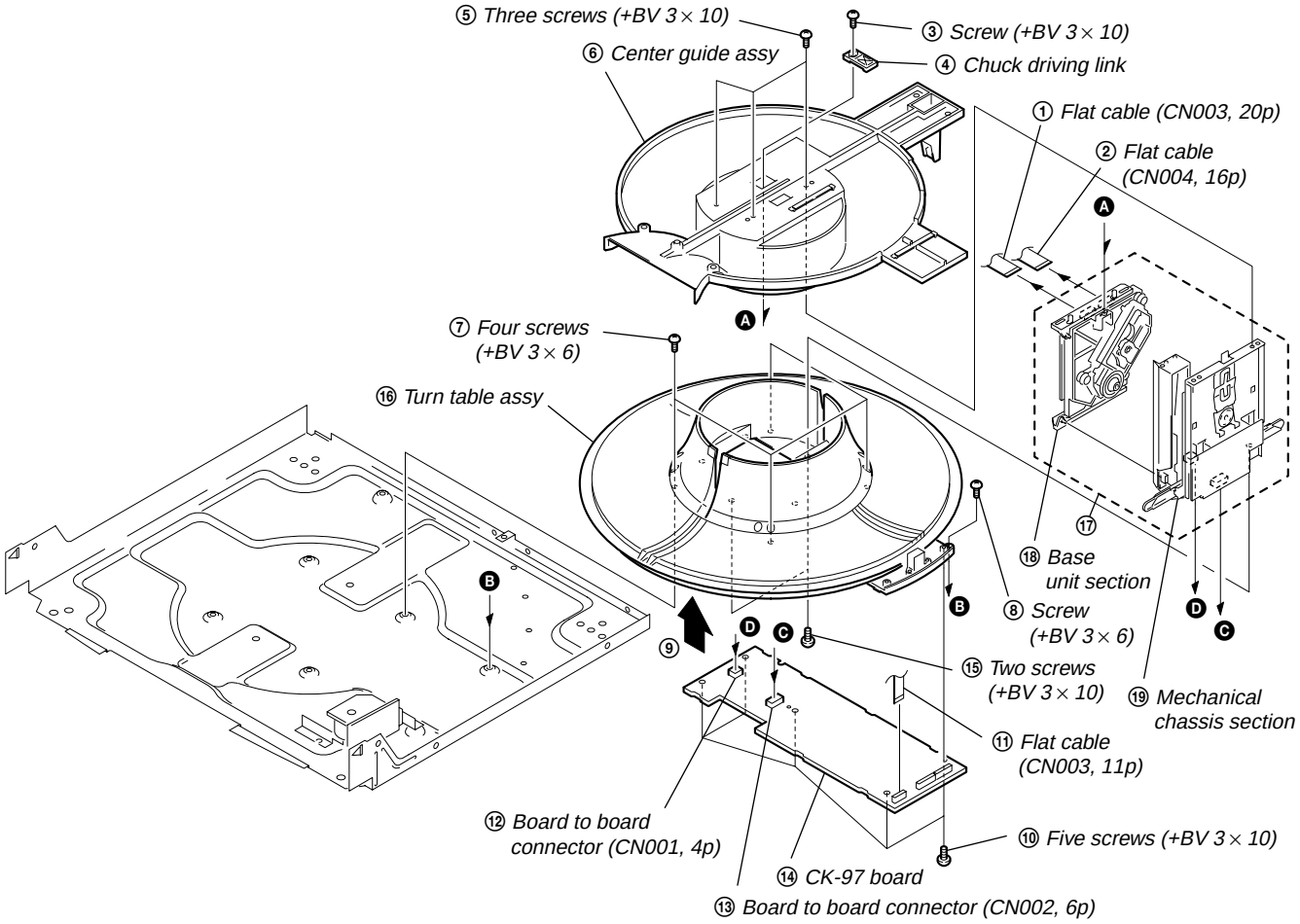
2-5. JACK PLATE, CV-34 BOARD


③ Two screws (+BV 3 × 10)
⑤ Four screws (+BV 3 × 10)
② Two screws (+BV 3 × 10)
⑪ Five screws (+BV 3 × 10)
DVP-CX860 (US,CND) model
④
A
① Screw (+BV 3 × 6)
⑮ Jack plate
⑭ CV-34 board
⑫ Screw (+BV 3 × 6)
⑬ Chassis bracket
A
⑥ CH-98 board
⑤ Six screws (+BV 3 × 10)
DVP-CX870D model
DVP-CX860 (AEP,UK) model
⑤ Four screws (+BV 3 × 10)
⑩ ER-12 board
⑨ Flat cable (CN902, 11p)
⑦ Four screws (+BV 3 × 10)
⑧ Flat cable (CN901, 15p)

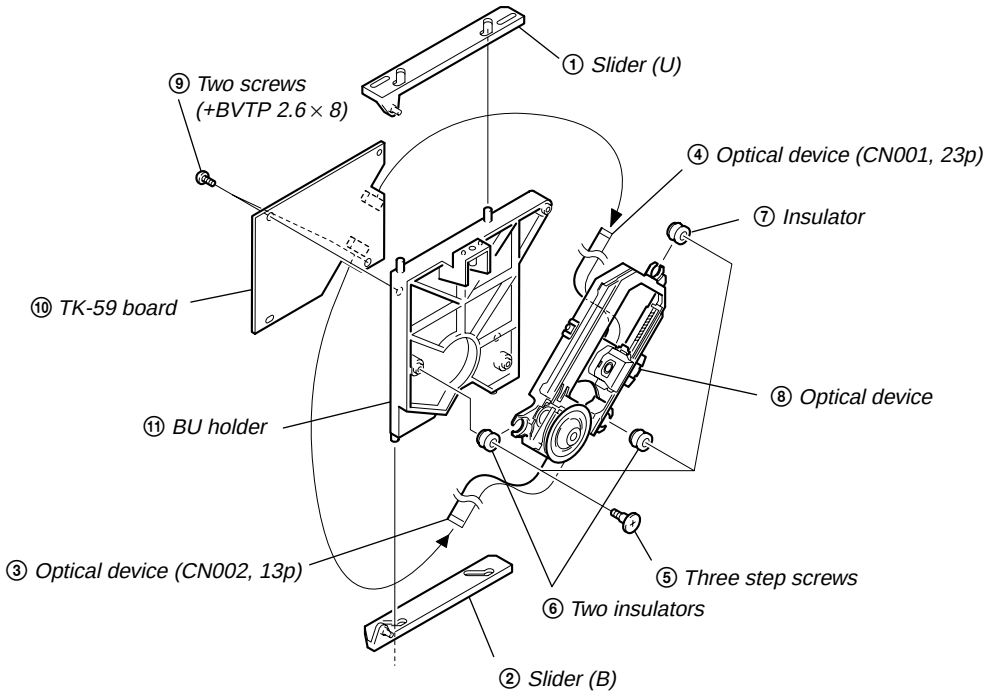
2-6. POWER BLOCK, R PANEL


⑧ Two screws (+BV EXT W 3 × 8)
③ Two screws (+BV 3 × 6)
⑩ Power block
② Two screws (+BV 3 × 10)
⑥ Power PC board cover
B
④ Three screws (+BV 3 × 10)
A
⑤
⑨ R panel
A
B
① Harness (PA-137) (CN101, 15p)
⑦ Power cord (CN1, 2p)

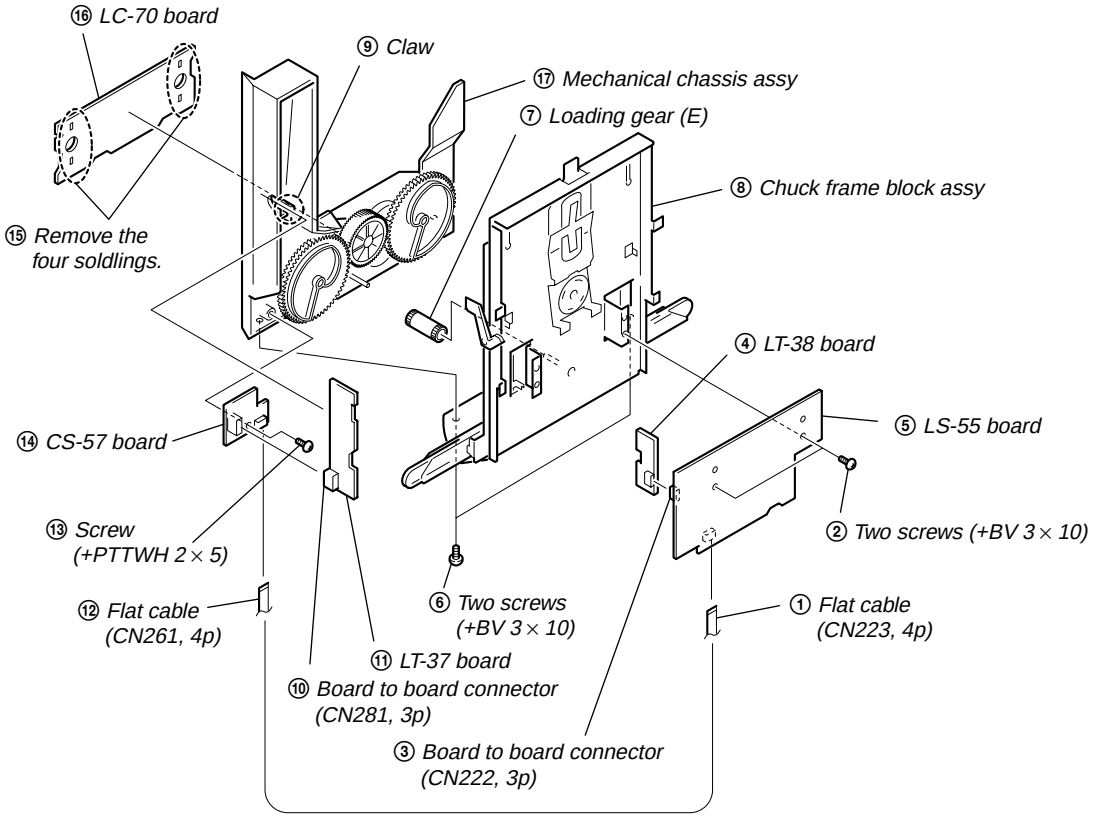
2-7. TURN TABLE ASSEMBLY


⑤ Three screws (+BV 3× 10)
③ Screw (+BV 3× 10)
⑥ Center guide assy
④ Chuck driving link
① Flat cable (CN003, 20p)
② Flat cable (CN004, 16p)
⑦ Four screws (+BV 3× 6)
⑯ Turn table assy
⑱ Base unit section
⑧ Screw (+BV 3× 6)
⑮ Two screws (+BV 3× 10)
⑲ Mechanical chassis section
⑪ Flat cable (CN003, 11p)
⑫ Board to board connector (CN001, 4p)
⑩ Five screws (+BV 3× 10)
⑭ CK-97 board
⑬ Board to board connector (CN002, 6p)

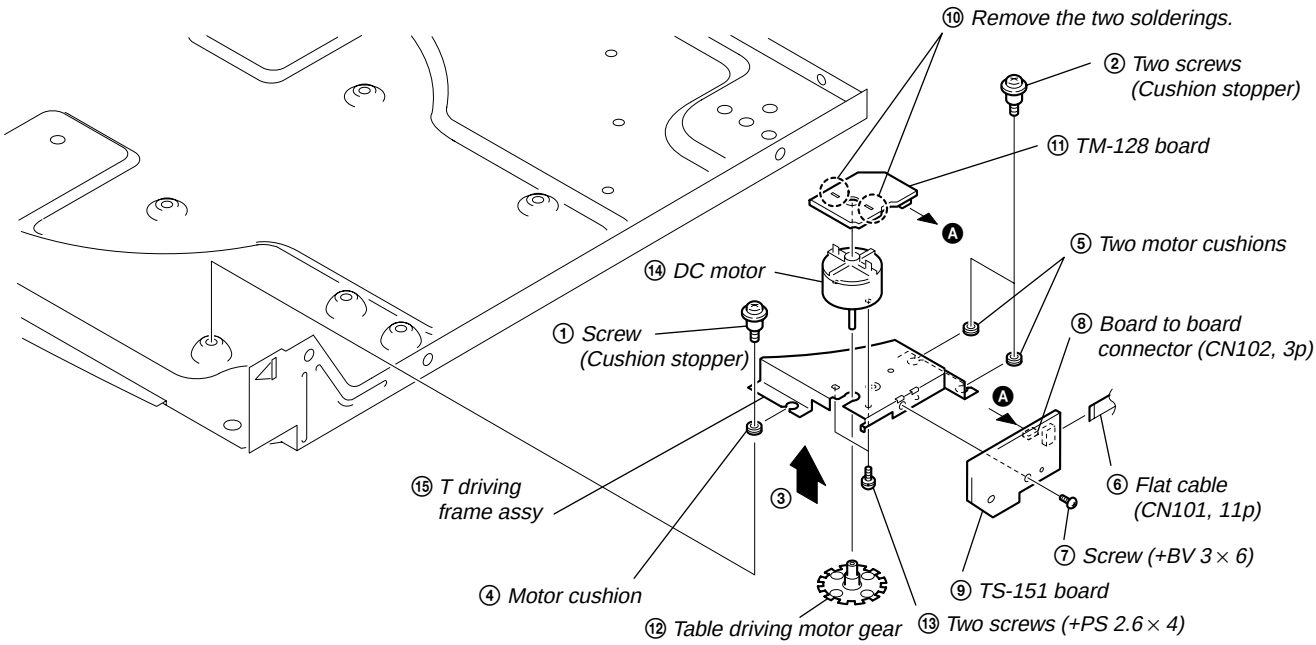
2-8. BASE UNIT SECTION



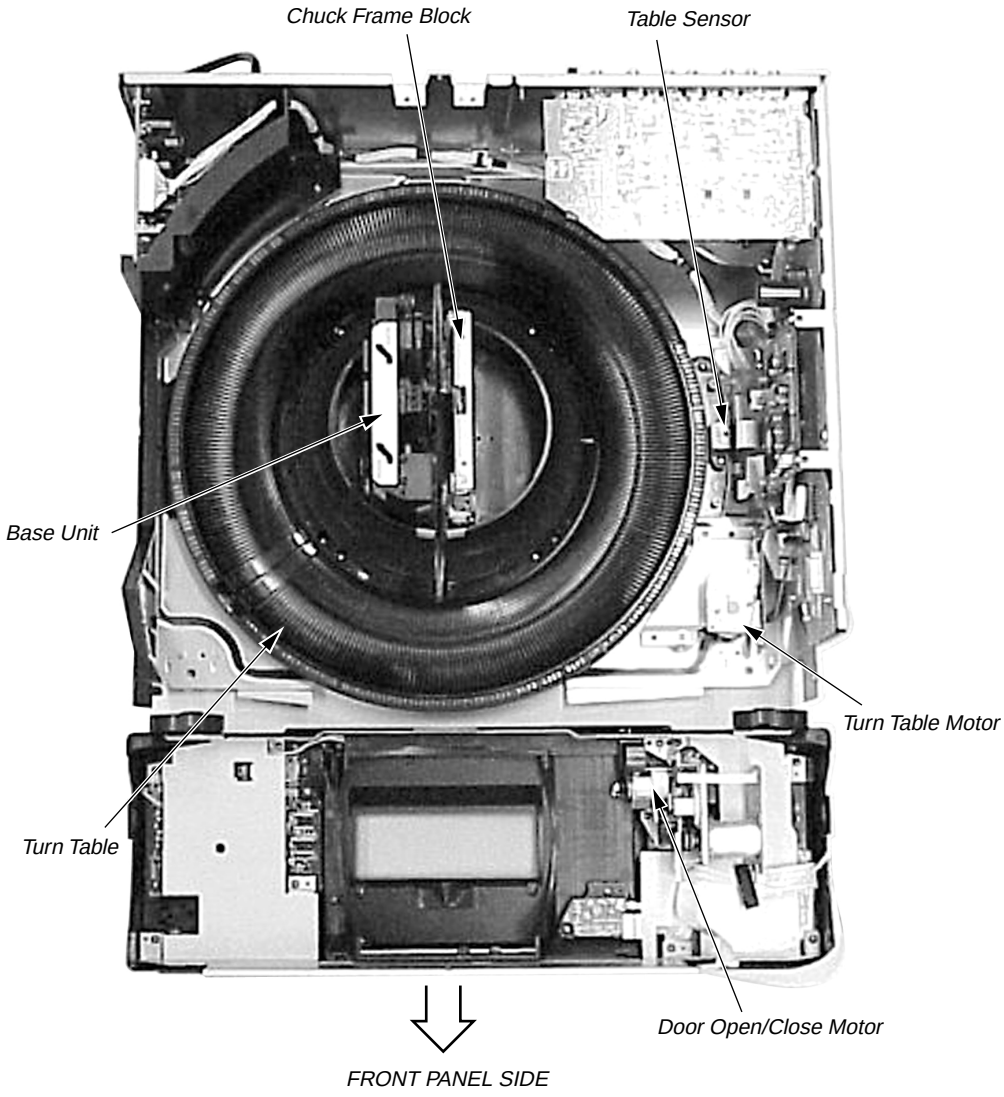
2-9. MECHANICAL CHASSIS SECTION


⑯ LC-70 board
⑨ Claw
⑰ Mechanical chassis assy
⑦ Loading gear (E)
⑧ Chuck frame block assy
⑮ Remove the four soldlings.
④ LT-38 board
⑤ LS-55 board
⑭ CS-57 board
⑬ Screw (+PTTWH 2 × 5)
② Two screws (+BV 3 × 10)
⑫ Flat cable (CN261, 4p)
⑥ Two screws (+BV 3 × 10)
① Flat cable (CN223, 4p)
⑪ LT-37 board
⑩ Board to board connector (CN281, 3p)
③ Board to board connector (CN222, 3p)

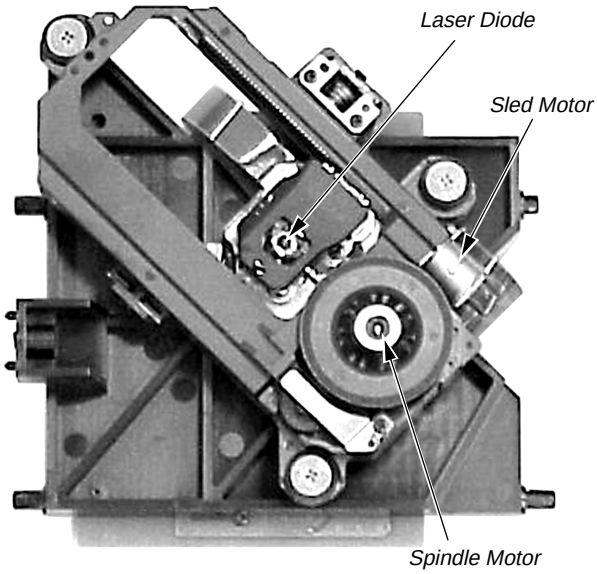
2-10. T DRIVING ASSEMBLY


⑩ Remove the two solderings.
② Two screws (Cushion stopper)
⑪ TM-128 board
A
⑤ Two motor cushions
⑭ DC motor
⑧ Board to board connector (CN102, 3p)
① Screw (Cushion stopper)
A
⑮ T driving frame assy
③
⑥ Flat cable (CN101, 11p)
⑦ Screw (+BV 3 × 6)
④ Motor cushion
⑨ TS-151 board
⑫ Table driving motor gear
⑬ Two screws (+PS 2.6 × 4)

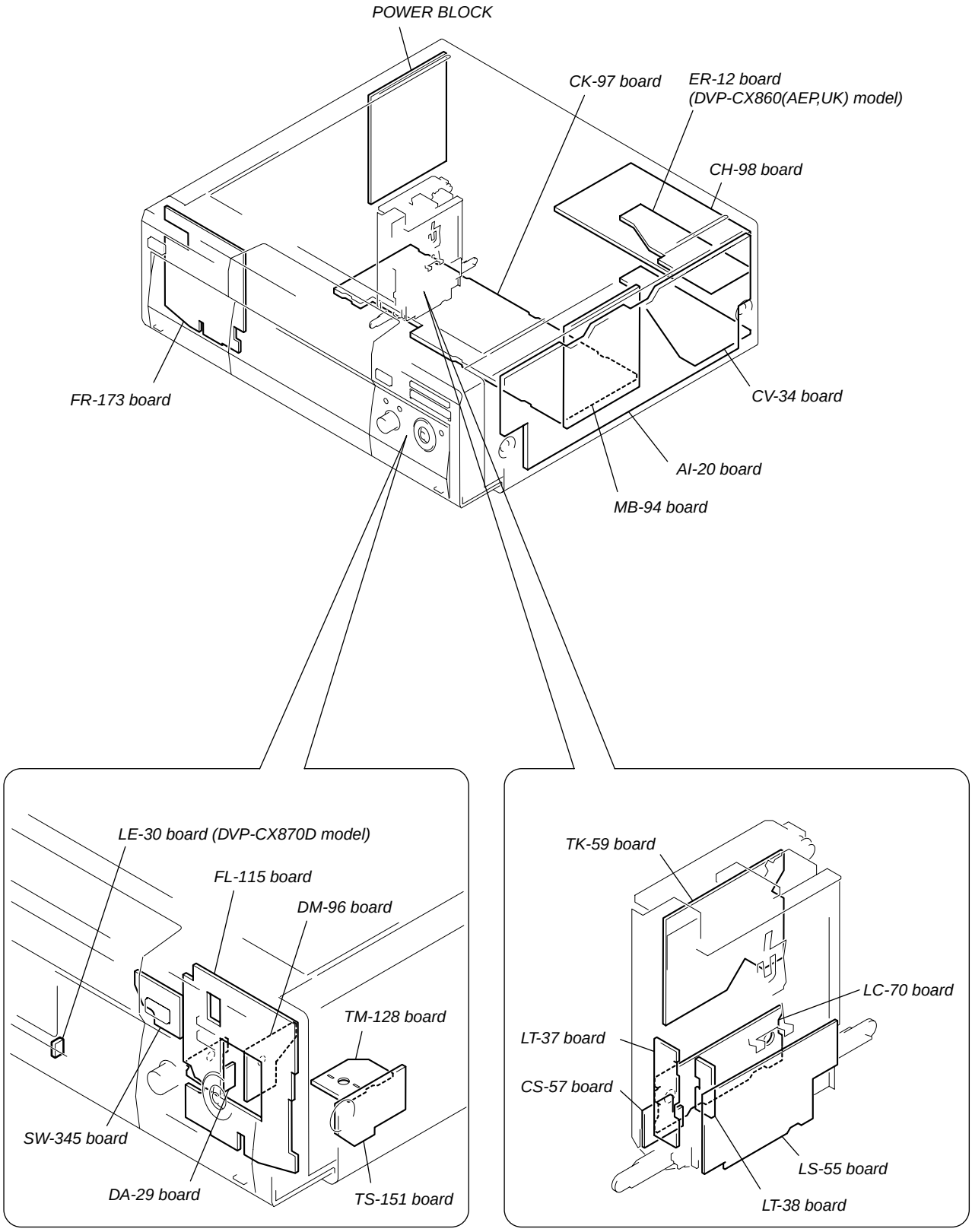
2-11. INTERNAL VIEWS



• BASE UNIT SECTION



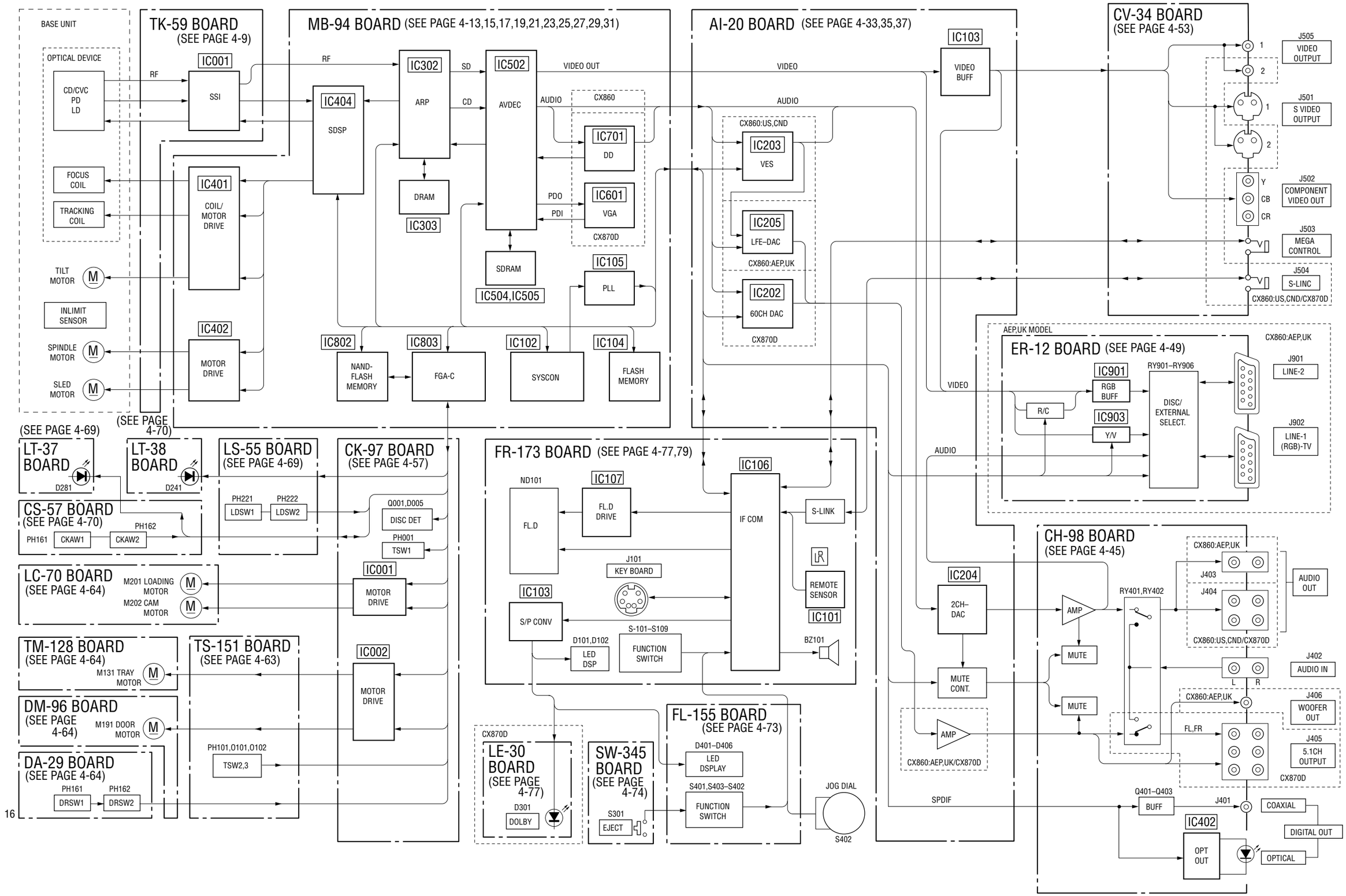
2-12. CIRCUIT BOARDS LOCATION



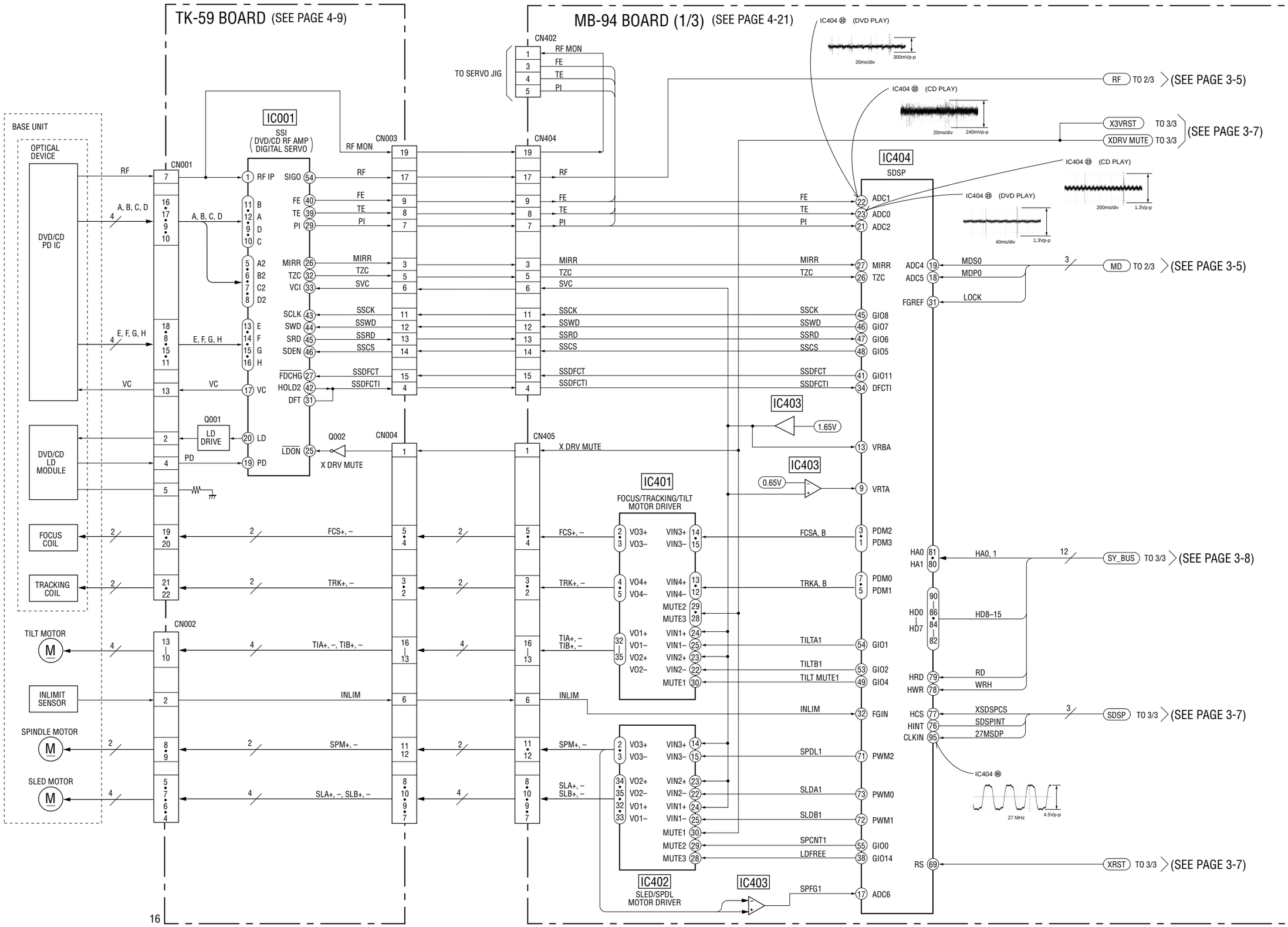
MEMO

SECTION 3
BLOCK DIAGRAMS

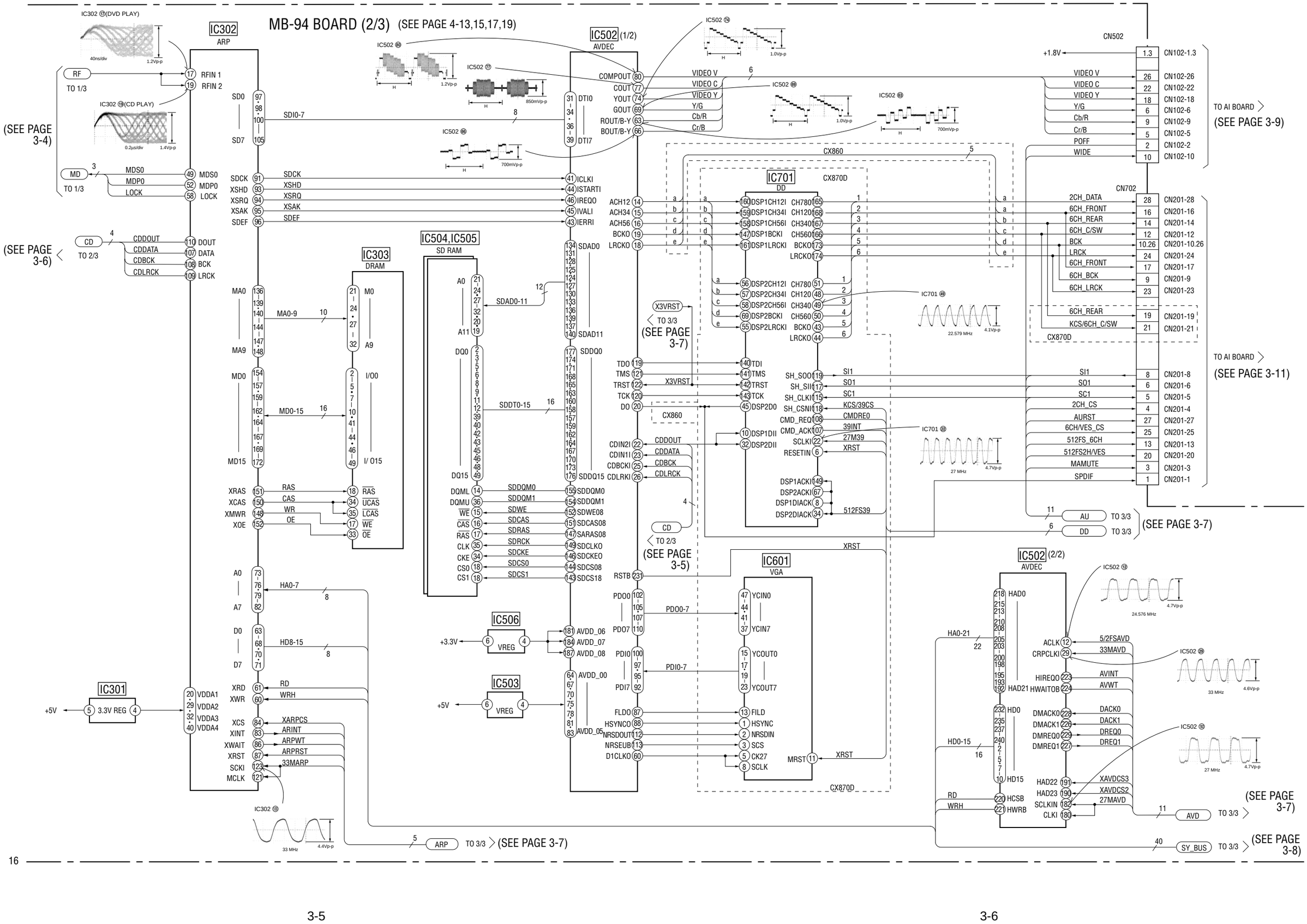
3-1. OVERALL BLOCK DIAGRAM



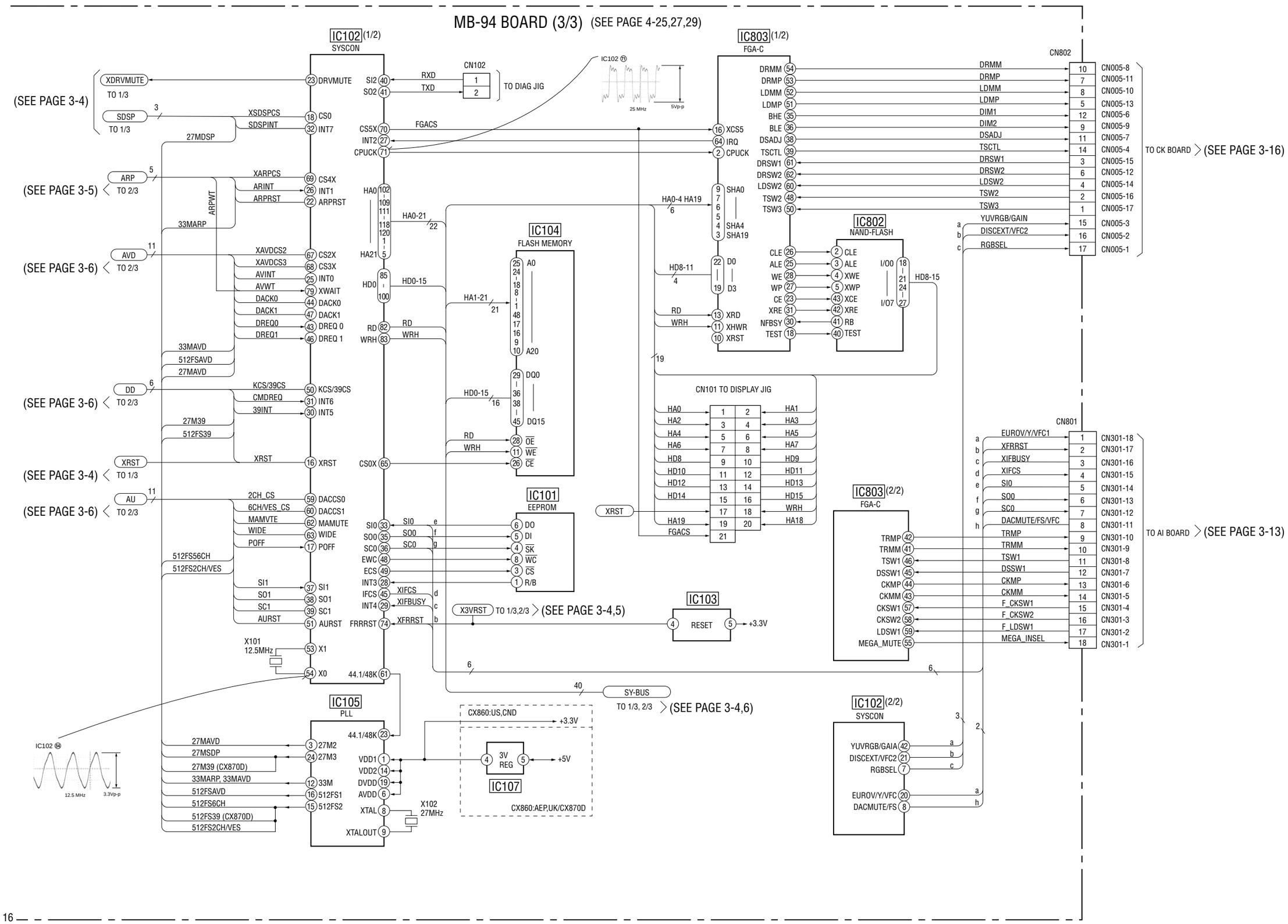
3-2. RF/SERVO BLOCK DIAGRAM



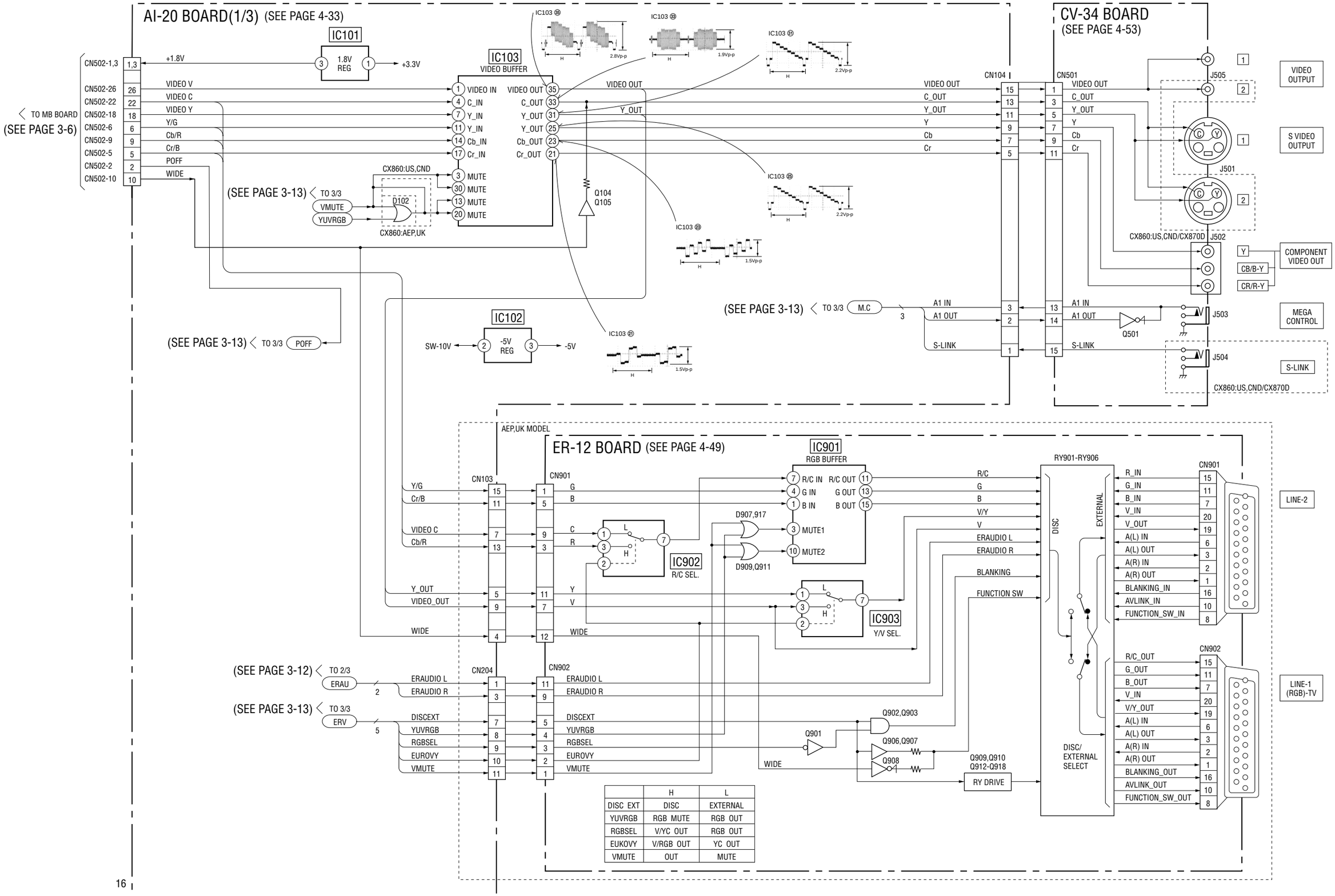
3-3. SIGNAL PROCESS BLOCK DIAGRAM



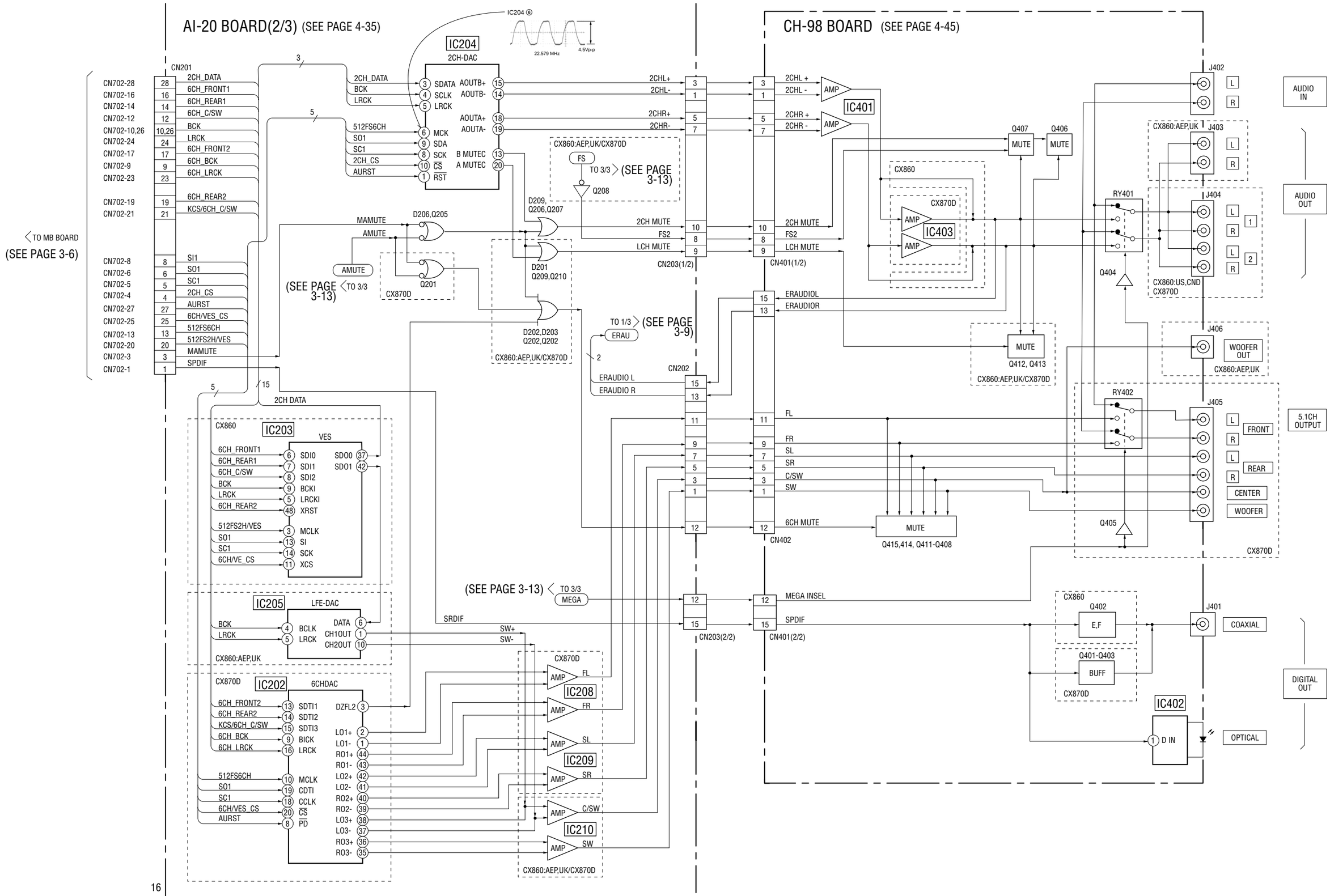
3-4. SYSTEM CONTROL BLOCK DIAGRAM



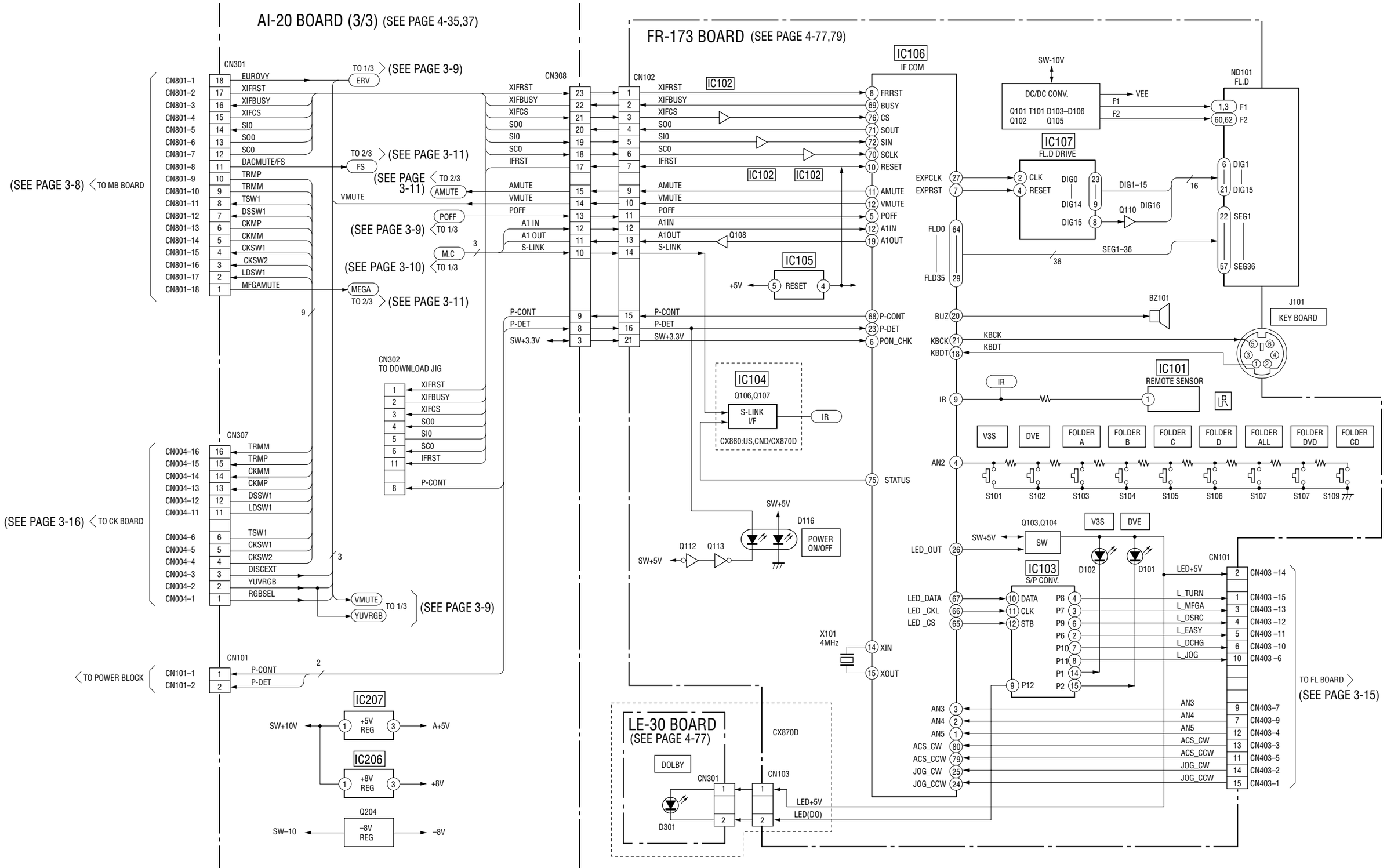
3-5. VIDEO EURO BLOCK DIAGRAM



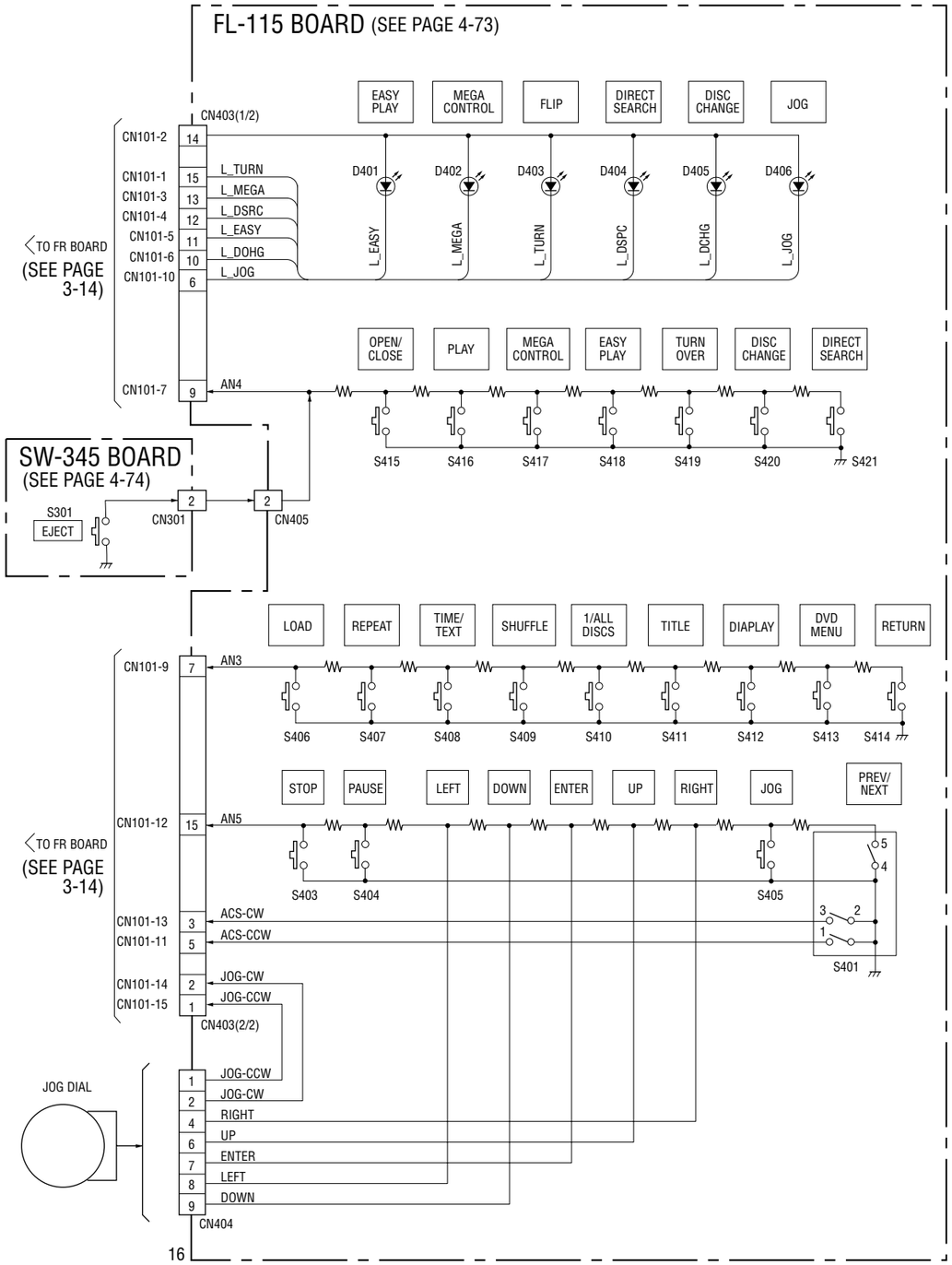
3-6. AUDIO BLOCK DIAGRAM

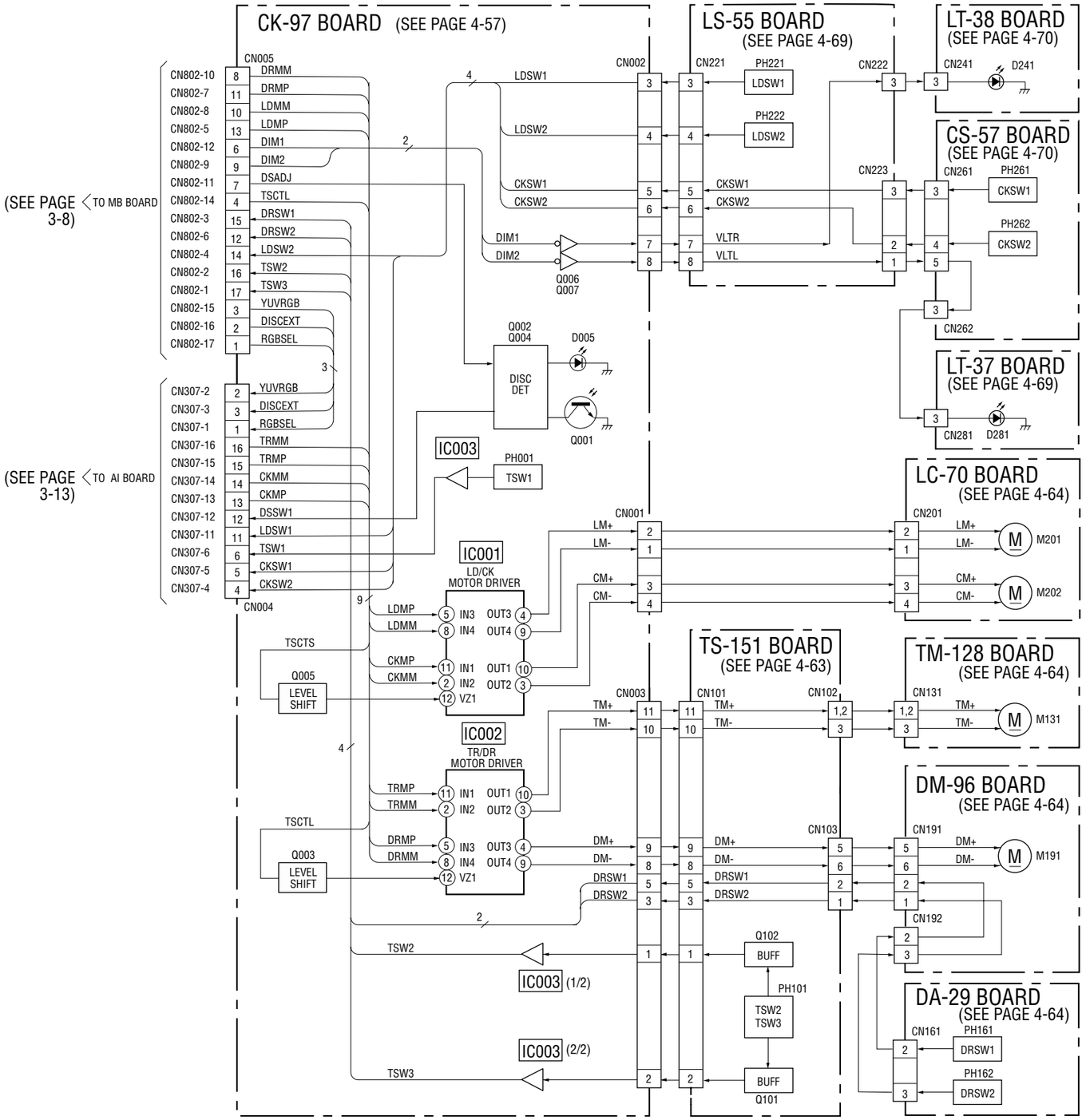


3-7. INTERFACE CONTROL BLOCK DIAGRAM (1/2)

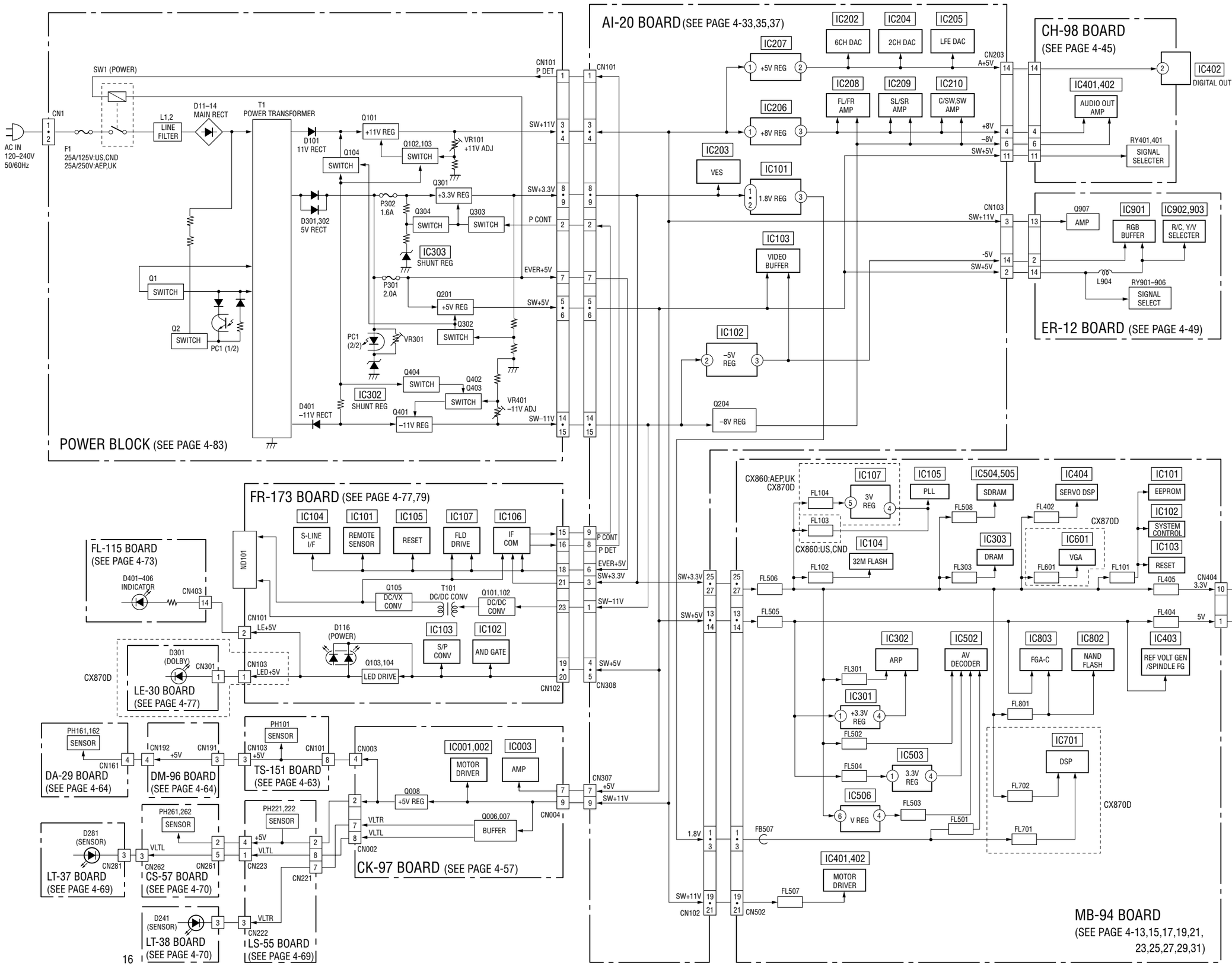


3-8. INTERFACE CONTROL BLOCK DIAGRAM (2/2)





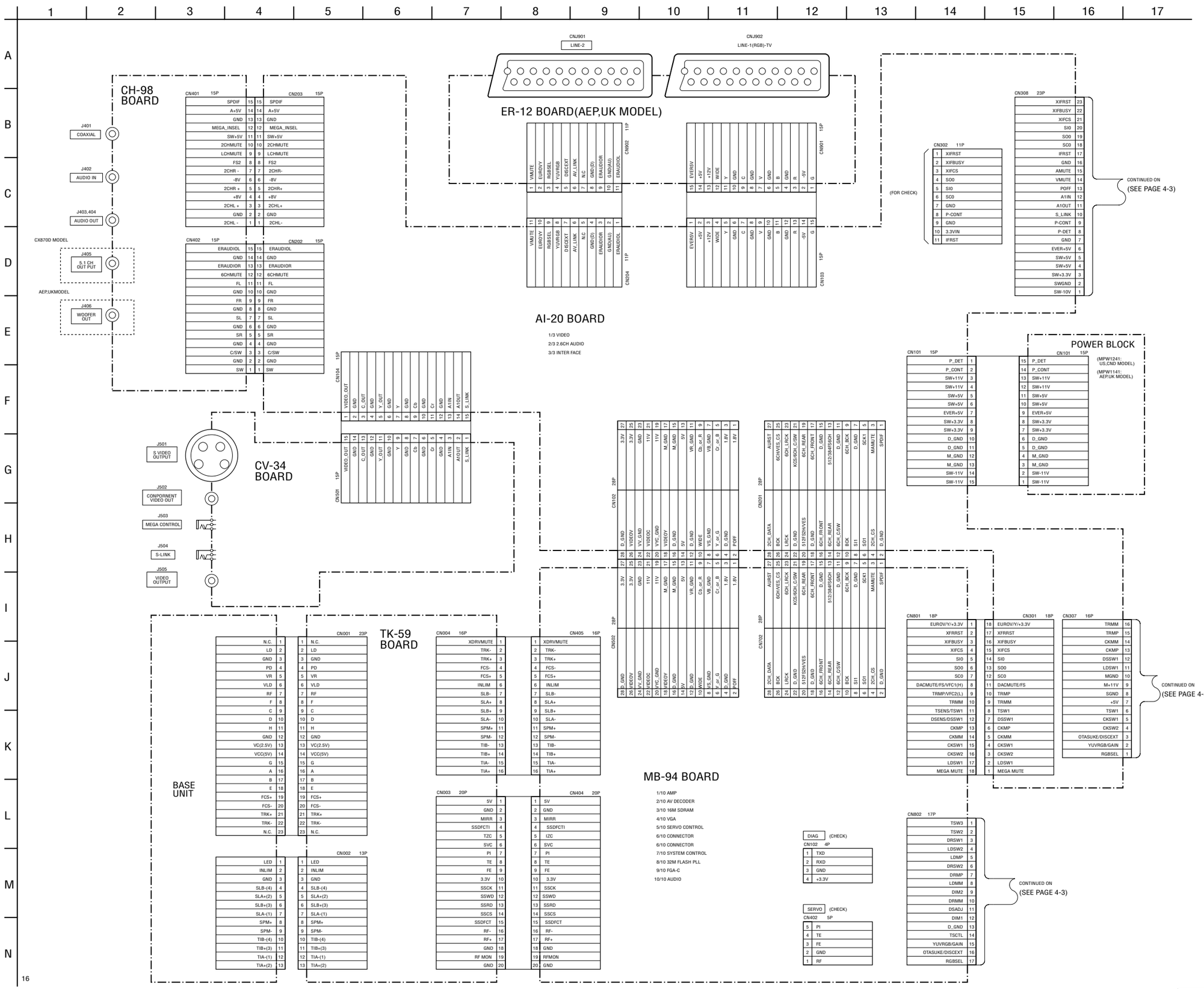
3-9. POWER BLOCK DIAGRAM



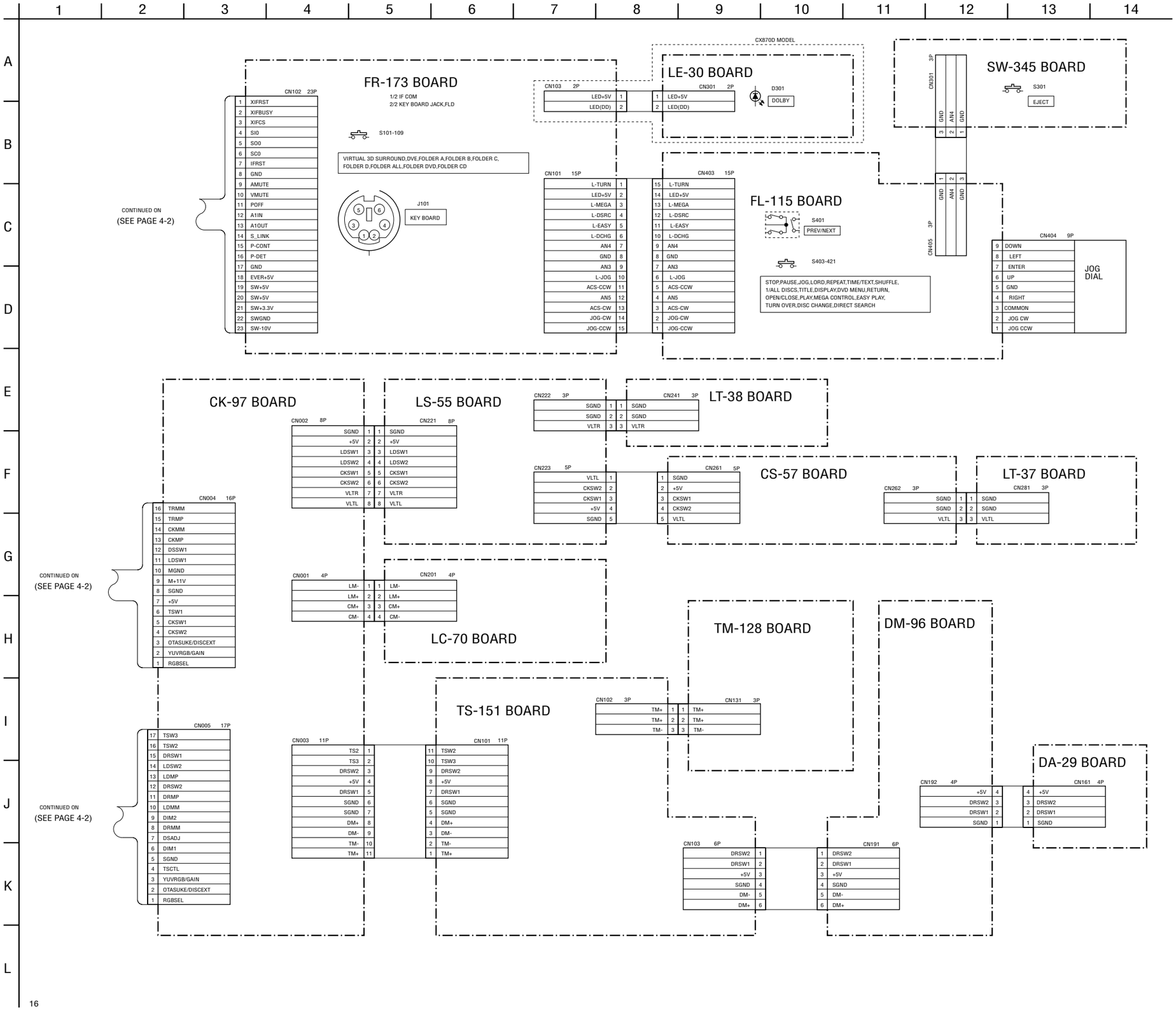
MEMO

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/2)


CH-98 BOARD
CN401 15P
CN203 15P
SPDIF 15 15 SPDIF
A+5V 14 14 A+5V
GND 13 13 GND
MEGA_INSEL 12 12 MEGA_INSEL
SW+5V 11 11 SW+5V
2CHMUTE 10 10 2CHMUTE
LCHMUTE 9 9 LCHMUTE
FS2 8 8 FS2
2CHR - 7 7 2CHR-
-8V 6 6 -8V
2CHR + 5 5 2CHR+
+8V 4 4 +8V
2CHL + 3 3 2CHL+
GND 2 2 GND
2CHL - 1 1 2CHL-
CN402 15P
CN202 15P
ERAUDIOL 15 15 ERAUDIOL
GND 14 14 GND
ERAUDIOR 13 13 ERAUDIOR
6CHMUTE 12 12 6CHMUTE
FL 11 11 FL
GND 10 10 GND
FR 9 9 FR
GND 8 8 GND
SL 7 7 SL
GND 6 6 GND
SR 5 5 SR
GND 4 4 GND
C/SW 3 3 C/SW
GND 2 2 GND
SW 1 1 SW
J401 COAXIAL
J402 AUDIO IN
J403,404 AUDIO OUT
CX870D MODEL
J405 5.1 CH OUT PUT
AEP,UKMODEL
J406 WOOFER OUT
CNJ901 LINE-2
CNJ902 LINE-1(RGB)-TV
ER-12 BOARD(AEP,UK MODEL)
CN902 11P
VMUTE EUROVY REBSEL YUVRGB DSCSKT AV_LINK NC GND(D) ERAUDIOR GND(AU) ERAUDIOL
CN901 15P
EVERSV +5V +12V WIDE Y GND C GND V GND B GND R -5V G
CN204 11P
CN103 15P
AI-20 BOARD
1/3 VIDEO
2/3 2.6CH AUDIO
3/3 INTER FACE
CN104 15P
VIDEO_OUT GND C_OUT GND Y_OUT GND Y GND Cb GND Cr GND A1IN A1OUT S_LINK
CN501 15P
J501 S VIDEO OUTPUT
J502 CONPORNENT VIDEO OUT
J503 MEGA CONTROL
J504 S-LINK
J505 VIDEO OUTPUT
CV-34 BOARD
CN102 28P
3.3V 3.3V GND 11V 11V M_GND M_GND 5V VR_GND Db_or_R Dr_or_B VB_GND Cr_or_G Y_or_G D_GND PSPF
D_GND VIDEOV VV_GND VIDEOC VVC_GND VIDEOY M_GND D_GND 5V D_GND WIDE VS_GND Cb_or_B Cr_or_R D_GND +8V
CN001 28P
AURST 6CHVSS_CS 6CH_LRCK KCS/6CH_CSW 6CH_REAR 6CH_FRONT D_GND 512/384FS6CH D_GND 6CH_BCK D_GND SCK1 MAMUTE SPDIF
2CH_DATA BCK LRCK 512FSEHVSS D_GND 6CH_FRONT D_GND 6CH_REAR D_GND 6CH_C/SW BCK SI1 SO1 2CH_CS D_GND
CN002 28P
3.3V 3.3V GND 11V 11V M_GND M_GND 5V VR_GND Cb_or_R VB_GND Cr_or_G 1.8V 1.8V D_GND PSPF
D_GND VIDEOV VV_GND VIDEOC VVC_GND VIDEOY M_GND D_GND 5V D_GND WIDE VS_GND Y_or_G Cr_or_B D_GND +8V
CN702 28P
AURST 6CHVSS_CS 6CH_LRCK KCS/6CH_C/SW 6CH_REAR 6CH_FRONT D_GND 512/384FS6CH D_GND 6CH_BCK D_GND SCK1 MAMUTE SPDIF
2CH_DATA BCK LRCK 512FSEHVSS D_GND 6CH_FRONT D_GND 6CH_REAR D_GND 6CH_C/SW BCK SI1 SO1 2CH_CS D_GND
CN302 11P
XIFRST XIFBUSY XIFCS SIO SCO GND P-CONT GND 3.3VIN IFRST
(FOR CHECK)
CN308 23P
XIFRST XIFBUSY XIFCS SIO SOO SCO IFRST GND AMUTE VMUTE POFF A1IN A1OUT S_LINK P-CONT P-DET GND EVER+5V SW+5V SW+5V SW+3.3V SWGND SW-10V
CONTINUED ON (SEE PAGE 4-3)
POWER BLOCK
CN101 15P
P_DET P_CONT SW+11V SW+11V SW+5V SW+5V EVER+5V SW+3.3V SW+3.3V D_GND D_GND M_GND M_GND SW-11V SW-11V
(MPW1241: US,CND MODEL)
(MPW1141: AEP,UK MODEL)
TK-59 BOARD
CN001 23P
N.C. LD GND PD VR VLD RF F C D H GND VC(2.5V) VCC(5V) G A B E FCS+ FCS- TRK+ TRK- N.C.
CN002 13P
LED INLIM GND SLB-(4) SLA+(2) SLB+(3) SLA-(1) SPM+ SPM- TIB-(4) TIB+(3) TIA-(1) TIA+(2)
CN004 16P
CN405 16P
XDRVMUTE TRK- TRK+ FCS- FCS+ INLIM SLB- SLA+ SLB+ SLA- SPM+ SPM- TIB- TIB+ TIA- TIA+
CN003 20P
CN404 20P
5V GND MIRR SSDFCTI TZC SVC PI TE FE 3.3V SSCK SSWD SSRD SSCS SSDFCT RF- RF+ GND RF MON GND
BASE UNIT
MB-94 BOARD
1/10 AMP
2/10 AV DECODER
3/10 16M SDRAM
4/10 VGA
5/10 SERVO CONTROL
6/10 CONNECTOR
6/10 CONNECTOR
7/10 SYSTEM CONTROL
8/10 32M FLASH PLL
9/10 FGA-C
10/10 AUDIO
DIAG (CHECK)
CN102 4P
TXD RXD GND +3.3V
SERVO (CHECK)
CN402 5P
PI TE FE GND RF
CN801 18P
EUROV/Y/+3.3V XFRRST XIFBUSY XIFCS SI0 SO0 SC0 DACMUTE/FS/VFC1(H) TRMP/VFC2(L) TRMM TSENS/TSW1 DSENS/DSSW1 CKMP CKMM CKSW1 CKSW2 LDSW1 MEGA MUTE
CN301 18P
EUROV/Y/+3.3V XFRRST XIFBUSY XIFCS SI0 SO0 SC0 DACMUTE/FS TRMP SGND +5V TSW1 DSSW1 CKMP CKMM CKSW1 CKSW2 LDSW1 MEGA MUTE
CN307 16P
TRMM TRMP CKMM CKMP DSSW1 LDSW1 MGND M+11V SGND +5V TSW1 CKSW1 CKSW2 OTASUKE/DISCEXT YUVRGB/GAIN RGBSEL
CONTINUED ON (SEE PAGE 4-3)
CN802 17P
TSW3 TSW2 DRSW1 LDSW2 LDMP DRSW2 DRMP LDMM DIM2 DRMM DSADJ DIM1 D_GND TSCTL YUVRGB/GAIN OTASUKE/DISCEXT RGBSEL
CONTINUED ON (SEE PAGE 4-3)

FRAME SCHEMATIC DIAGRAM (2/2)



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

- ○——— : indicates a lead wire mounted on the component side.
- ●——— : indicates a lead wire mounted on the printed side.
- ○ : Through hole.
- ▒▒▒ : Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

(For schematic diagrams)

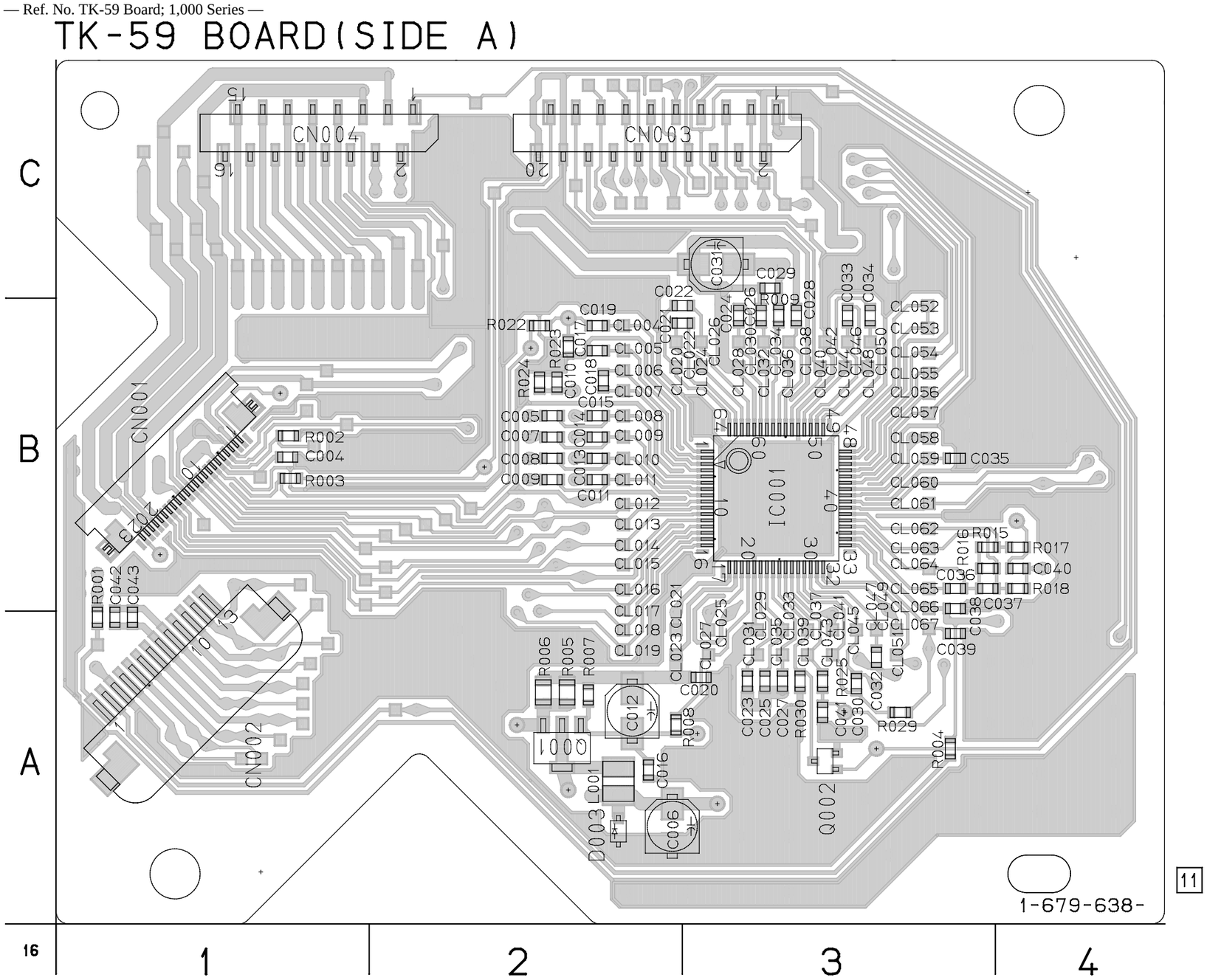
- All capacitors are in μF unless otherwise noted. pF : μμF. 50V or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4 W (Chip resistors : 1 /10 W) un-less otherwise specified.
  kΩ=1000Ω, MΩ=1000kΩ.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, be-cause it is damaged by the heat.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : non flammable resistor
- : fusible resistor
- : panel designation
- △ : internal component.
- : adjustment for repair.
- : B+ Line
- : B– Line
- Circled numbers refer to waveforms.
- Voltages are dc between measurement point.
- Readings are taken with a color-bar signals on DVD refer-ence disc and when playing CD reference disc.
- Readings are taken with a digital multimeter (DC 10MW).
- Voltage variations may be noted due to normal production toler-ances.

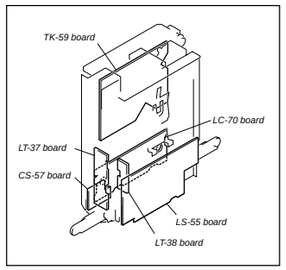
Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, pleas include the board name.

TK-59 (RF/SERVO) PRINTED WIRING BOARD

— Ref. No. TK-59 Board; 1,000 Series —





TK-59 BOARD (SIDE A)

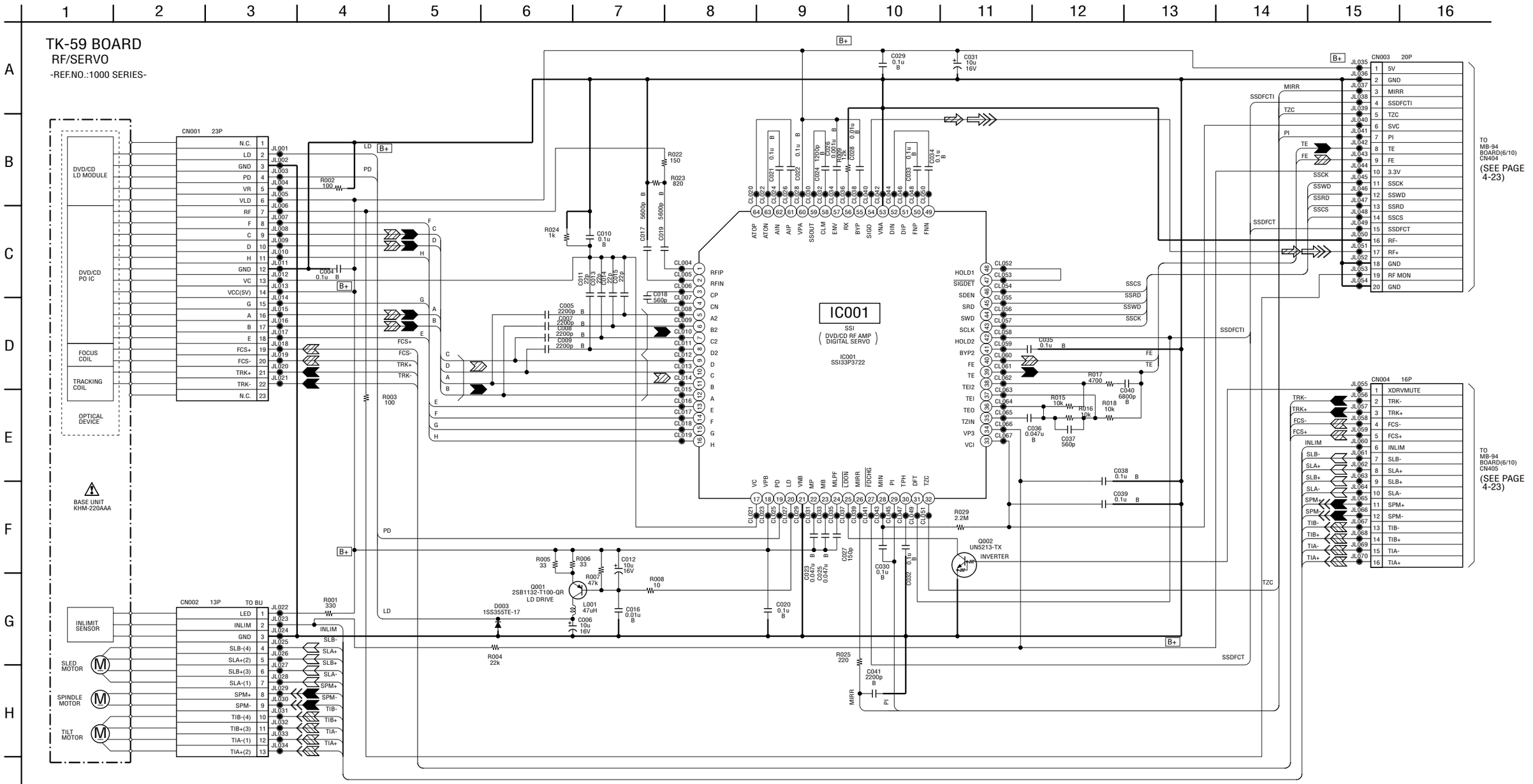
D003 A-2

IC001 B-3

Q001 A-2
Q002 A-3

For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.



Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SIGNAL PATH

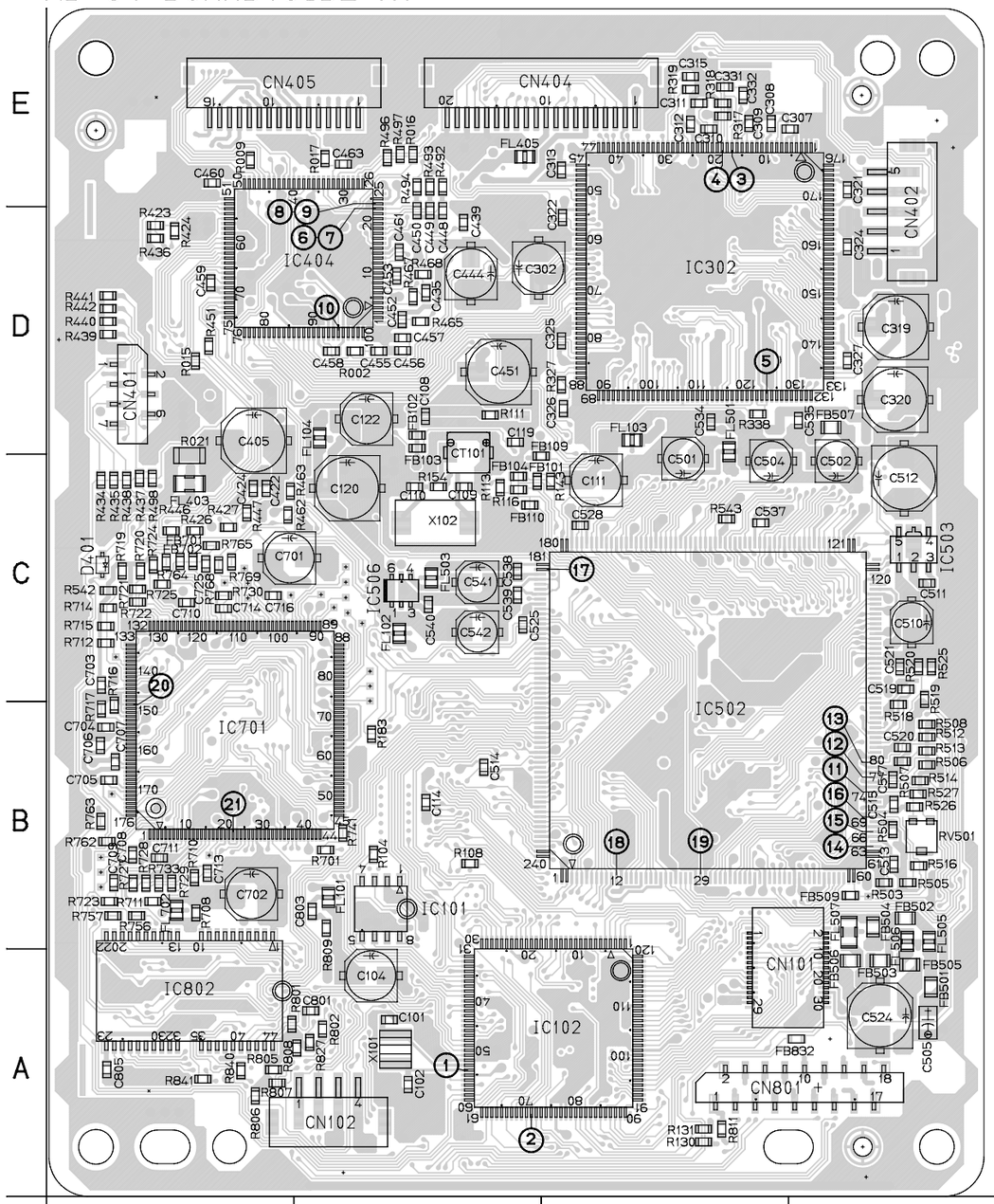
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB			⇨	⇨

SPINDLE SERVO (SPEED AND PHASE)	➡
TRACKING SERVO DVD/CD CDV	➡
SLED SERVO DVD/CD	⇨
FOCUS SERVO	⇨
SKEW SERVO DVD/CD	⇨

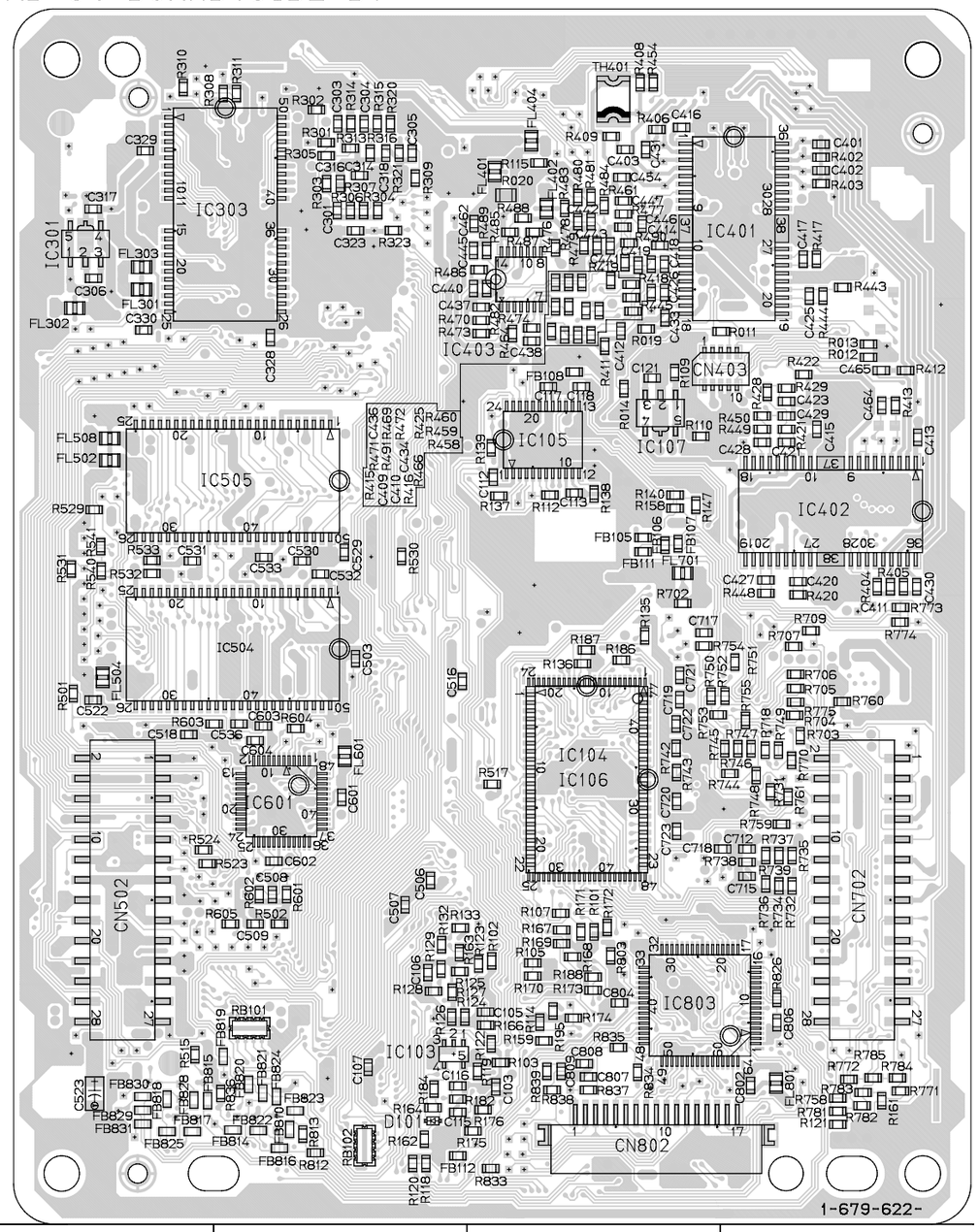
MB-94 (ARP, AV DECODER, 16M SDRAM, VGA, SERVO CONTROL, CONNECTOR, SYSTEM CONTROL, 32M FLASH, PLL, FGA-C, AUDIO) PRINTED WIRING BOARD

— Ref. No. MB-94 Board; 10,000 Series —

MB-94 BOARD(SIDE A)



MB-94 BOARD(SIDE B)



MB-94 BOARD (SIDE A)

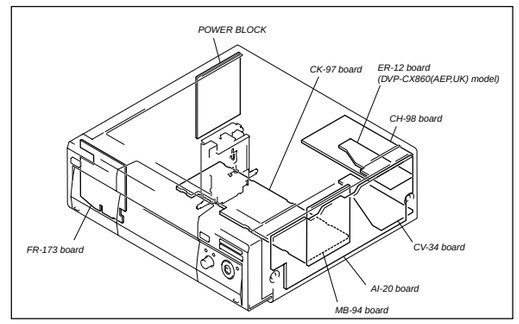
D401	C-1
IC101	B-2
IC102	A-3
IC302	D-3
IC404	D-2
IC502	B-3
IC503	C-4
IC506	C-2
IC701	B-1
IC802	A-1

MB-94 BOARD (SIDE B)

D101	A-6	IC403	D-7
IC103	A-6	IC504	C-6
IC104	B-7	IC505	C-6
IC105	D-7	IC601	B-6
IC106	B-7	IC803	A-7
IC107	D-7		
IC301	D-5		
IC303	E-6		
IC401	D-8		
IC402	C-8		

For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.



MB-94 BOARD(1/10)

ARP

-REF.NO.:10000 SERIES-
NO MARK:PB MODE

IC301
+3.3V REG
IC301
NJM2370U33-TE2

IC303
16M DRAM
IC303 GM71V18160CT-6TR

IC302
ARP
IC302
CXD9576R

MB-94 BOARD (1/10)

③ IC302 ⑰ (DVD PLAY)
40ns/div
1.2Vp-p

④ IC302 ⑲ (CD PLAY)
0.2µs/div
1.4Vp-p

⑤ IC302 ⑫③
33 MHz
4.4Vp-p

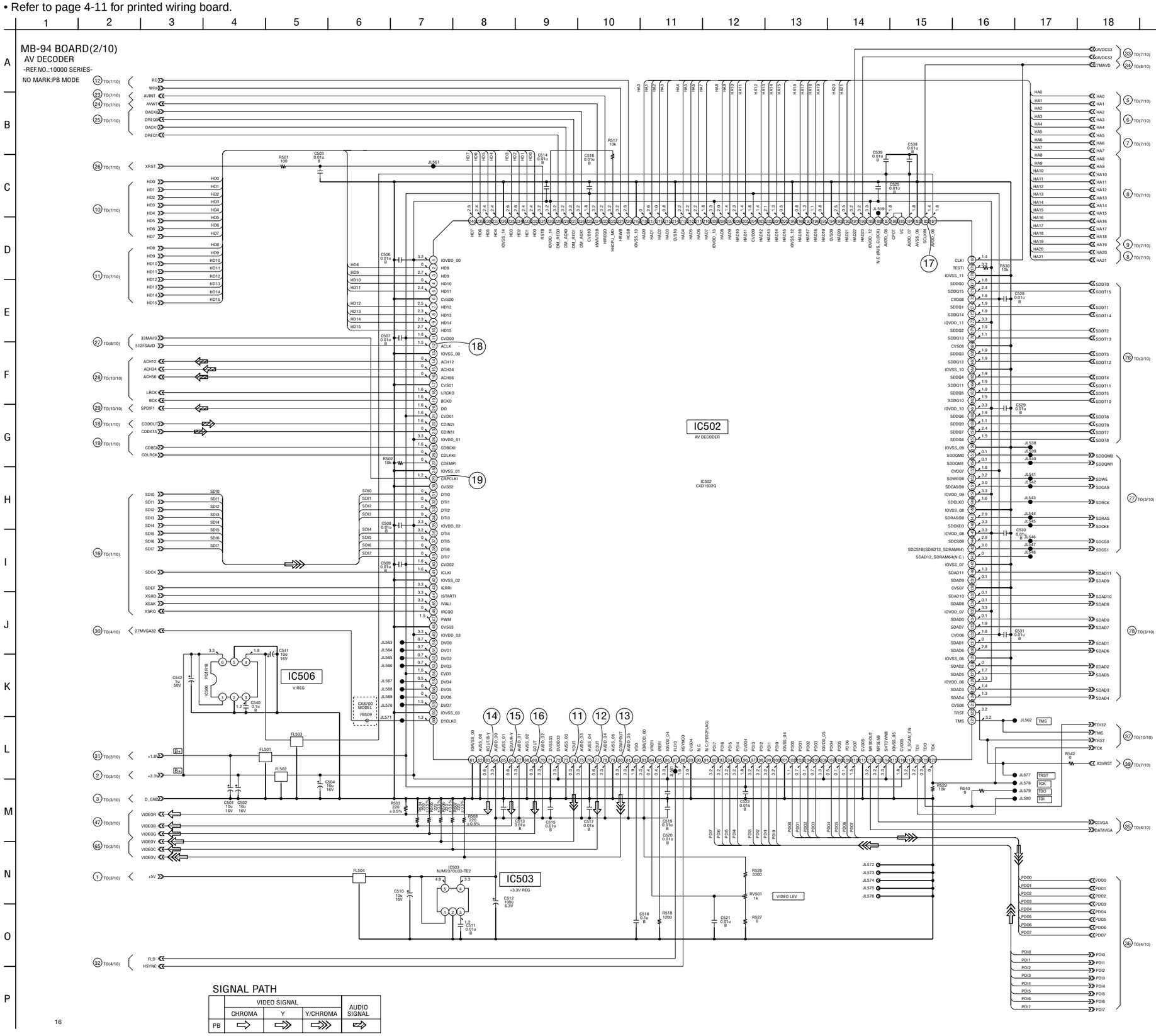
SIGNAL PATH

	VIDEO SIGNAL / Y/CHROMA	AUDIO SIGNAL
PB	⇨	⇨

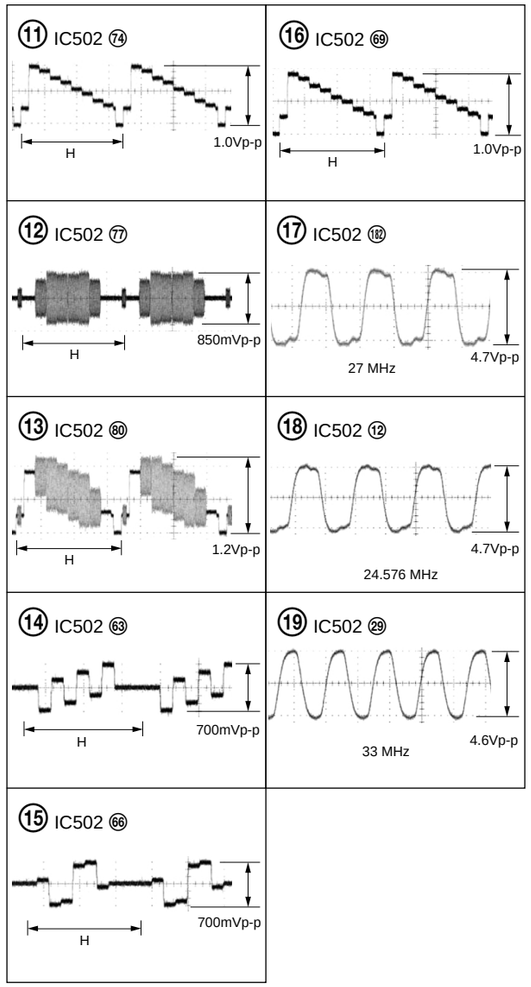
SPINDLE SERVO (SPEED AND PHASE) ⇨

For Schematic Diagram

• Refer to page 4-11 for printed wiring board.



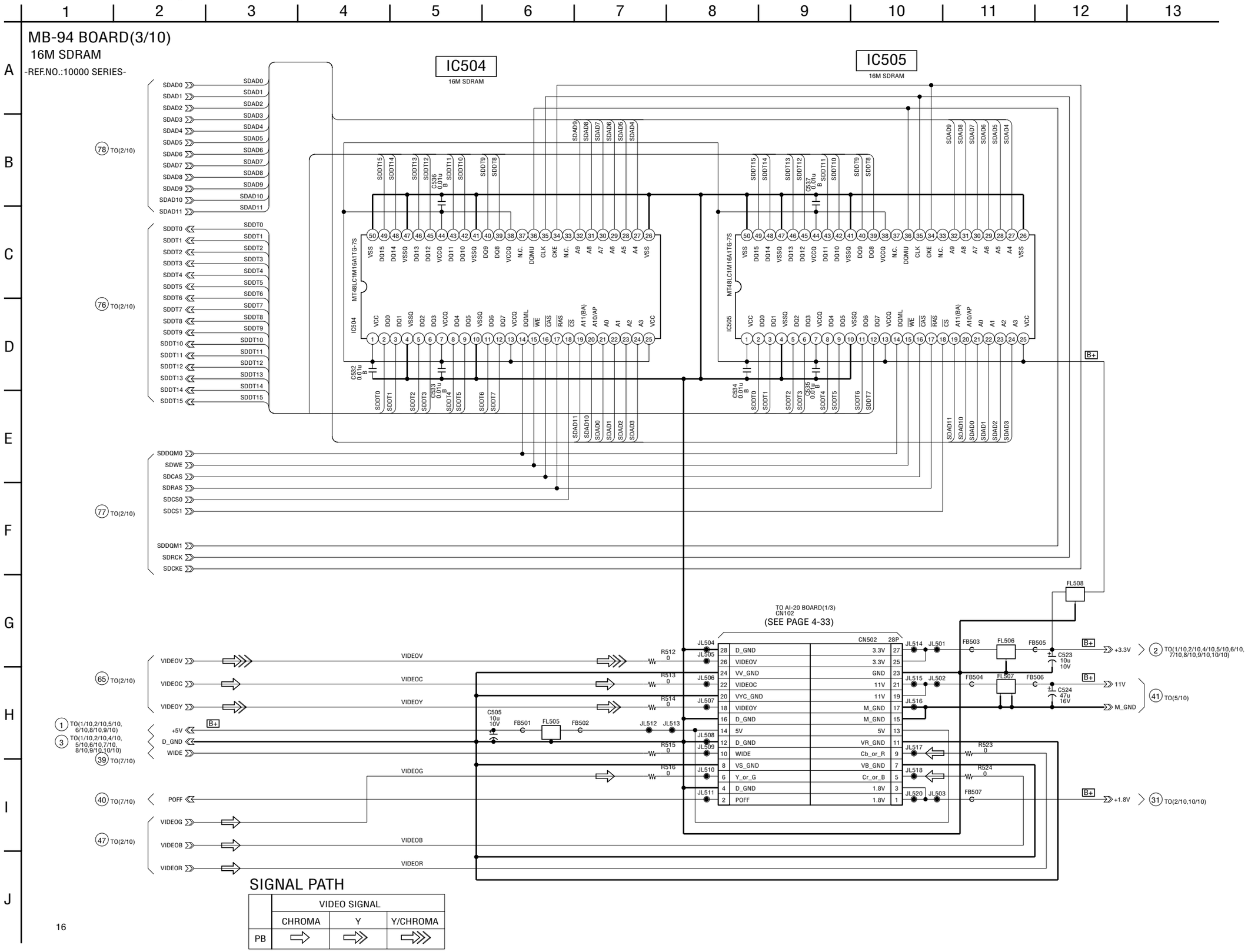
MB-94 BOARD (2/10)



AV DECODER
MB-94 (2/10)

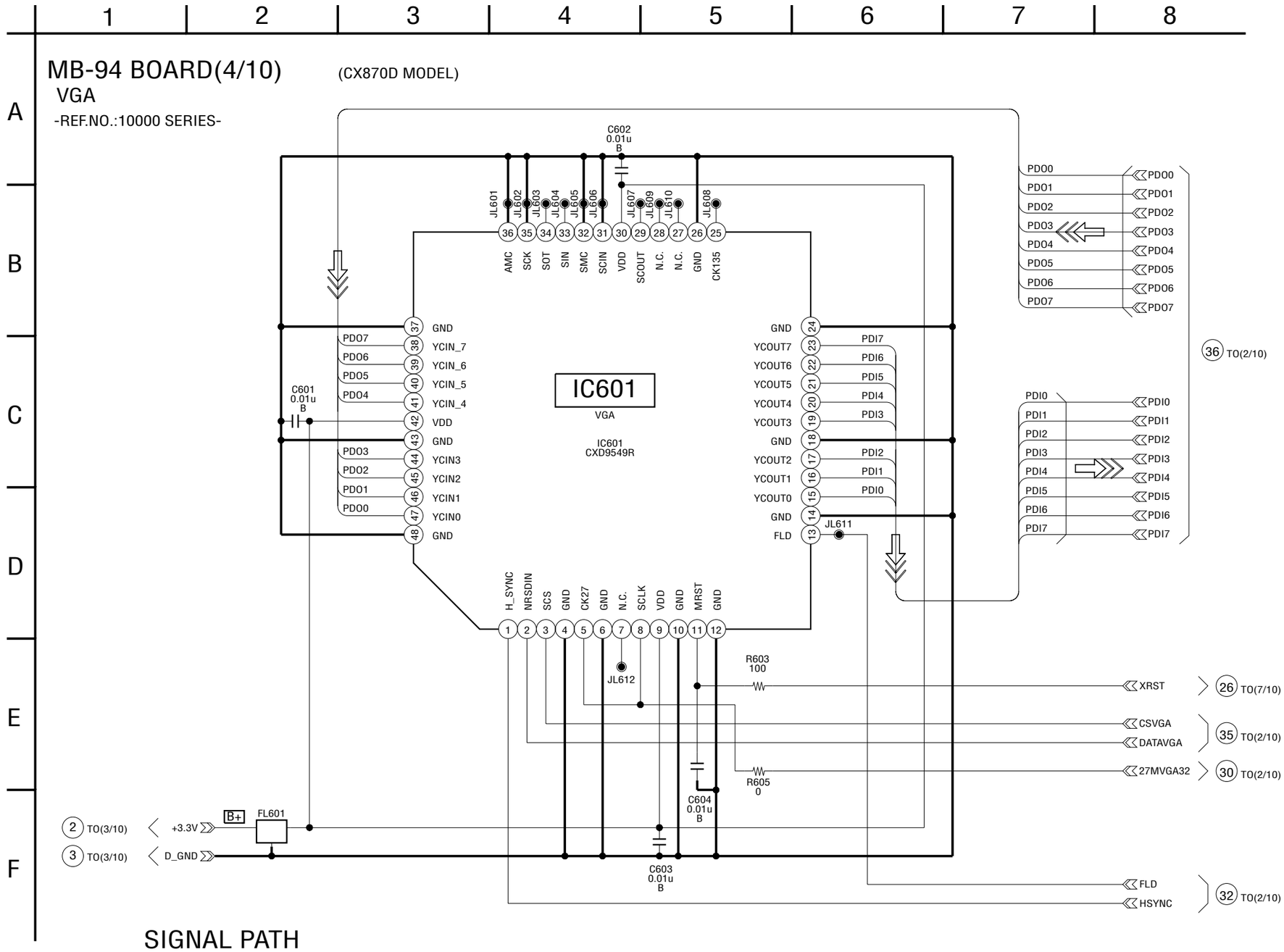
For Schematic Diagram

• Refer to page 4-11 for printed wiring board.



16

For Schematic Diagram
• Refer to page 4-11 for printed wiring board.

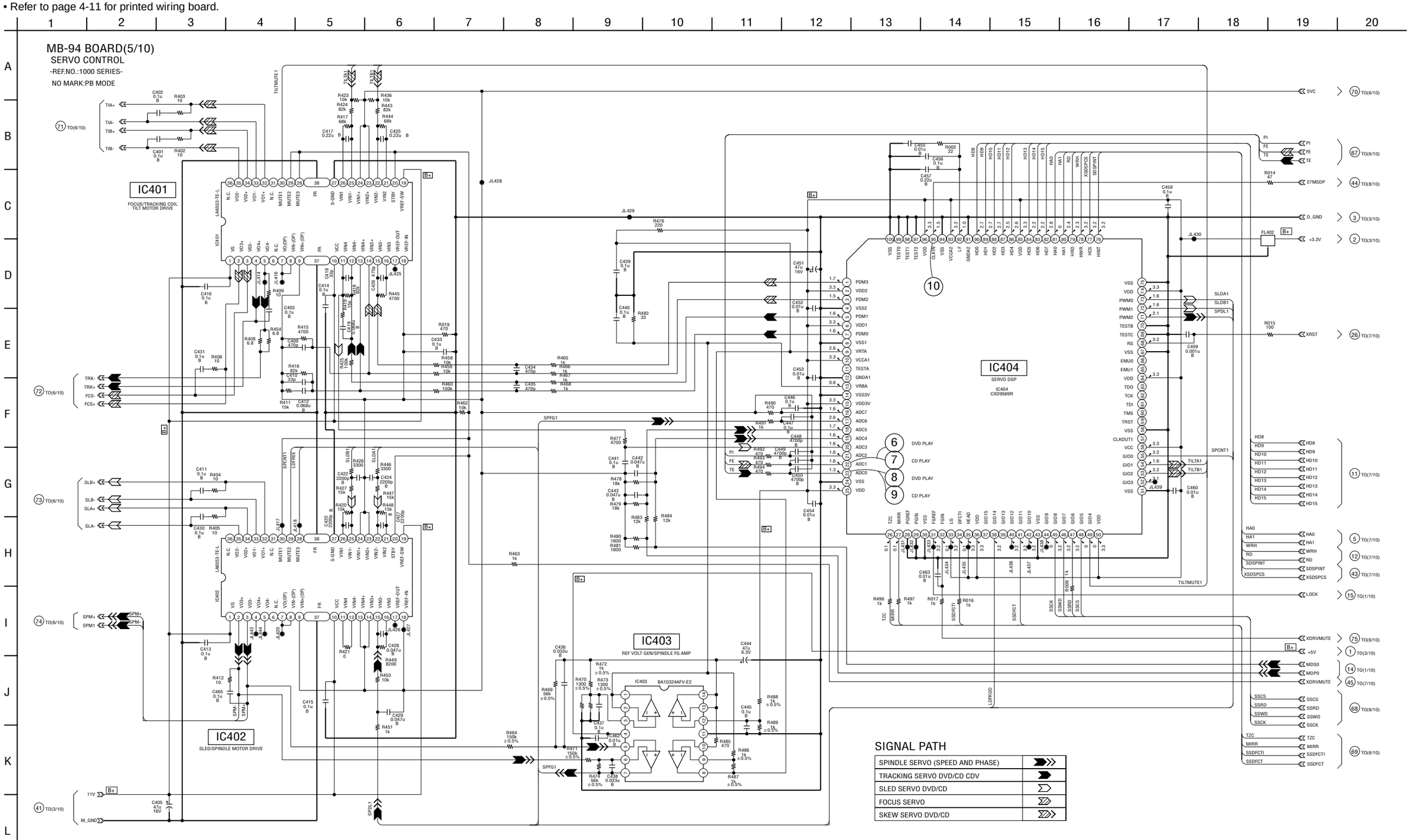


SIGNAL PATH

	VIDEO SIGNAL
	Y/CHROMA
PB	⇨

For Schematic Diagram

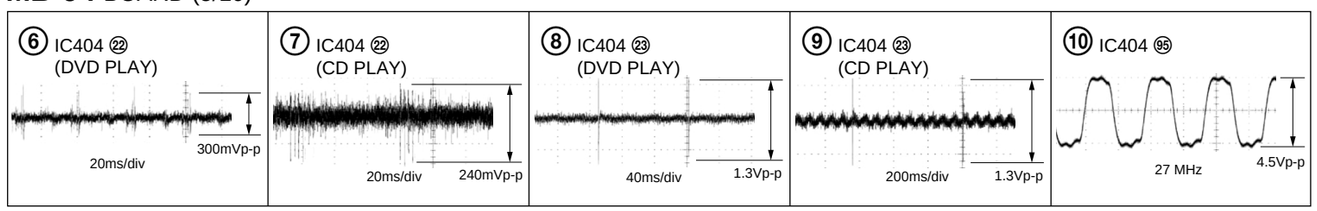
• Refer to page 4-11 for printed wiring board.



SIGNAL PATH

SPINDLE SERVO (SPEED AND PHASE)	
TRACKING SERVO DVD/CD CDV	
SLED SERVO DVD/CD	
FOCUS SERVO	
SKEW SERVO DVD/CD	

MB-94 BOARD (5/10)



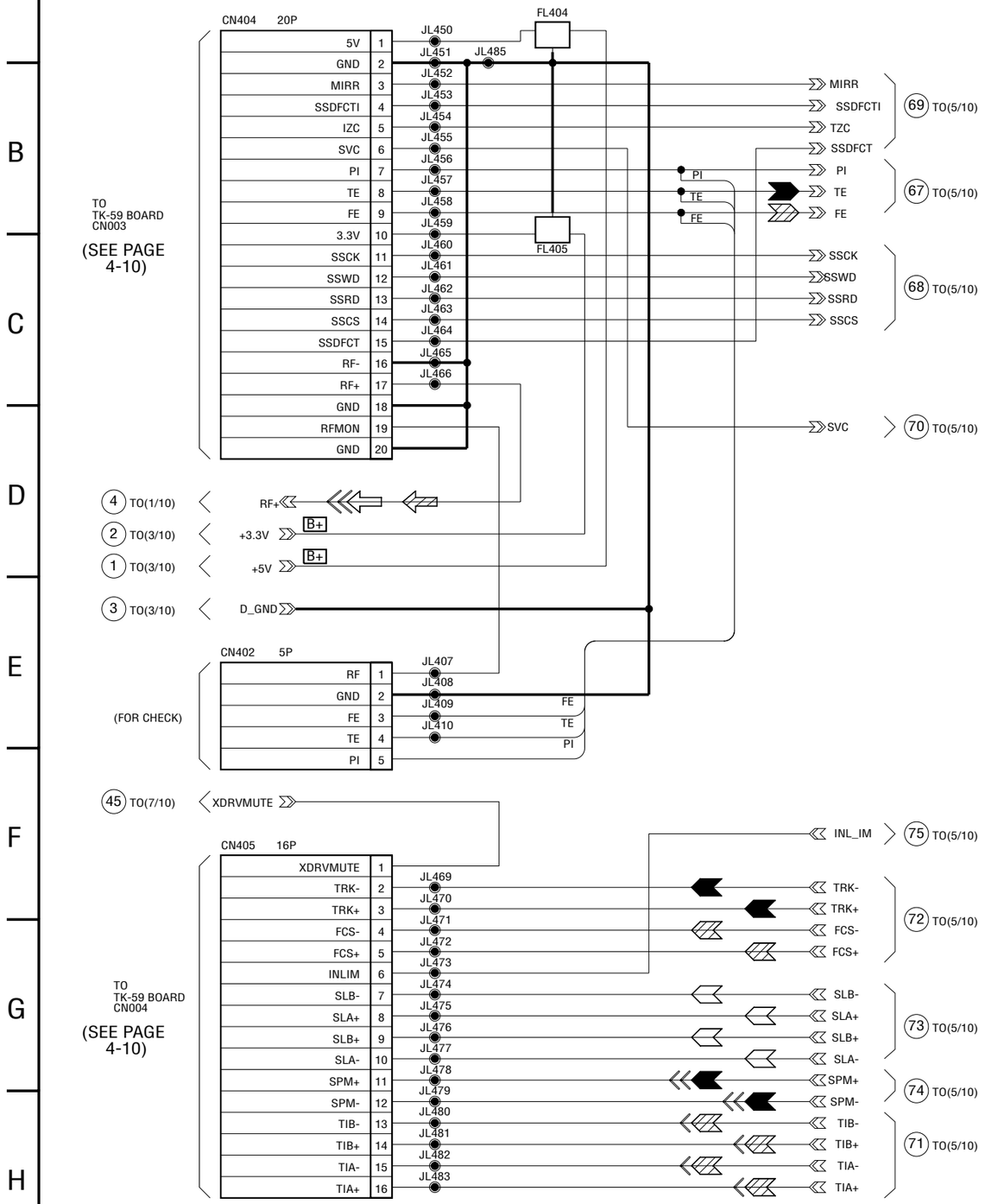
SERVO CONTROL
MB-94 (5/10)

For Schematic Diagram
• Refer to page 4-11 for printed wiring board.

MB-94 BOARD(6/10)

CONNECTOR

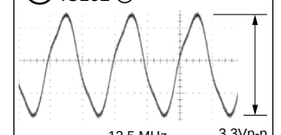
-REF.NO.:10000 SERIES-



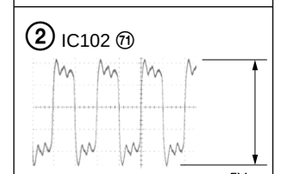
16

MB-94 BOARD (7/10)

① IC102 ㊹



② IC102 ㉛



SIGNAL PATH

	VIDEO SIGNAL	AUDIO SIGNAL
	Y/CHROMA	
PB	⇨	⇨

SPINDLE SERVO (SPEED AND PHASE)	⇨
TRACKING SERVO DVD/CD CDV	⇨
SLED SERVO DVD/CD	⇨
FOCUS SERVO	⇨
SKEW SERVO DVD/CD	⇨

For Schematic Diagram

• Refer to page 4-11 for printed wiring board.

MB-94 BOARD(7/10)

SYSTEM CONTROL

-REF.NO.:10000 SERIES-

NO MARK:PB MODE

IC101 BR9040F-D-E2 EEPROM

IC102 MB91108PFV-G-BND SYSTEM CONTROL

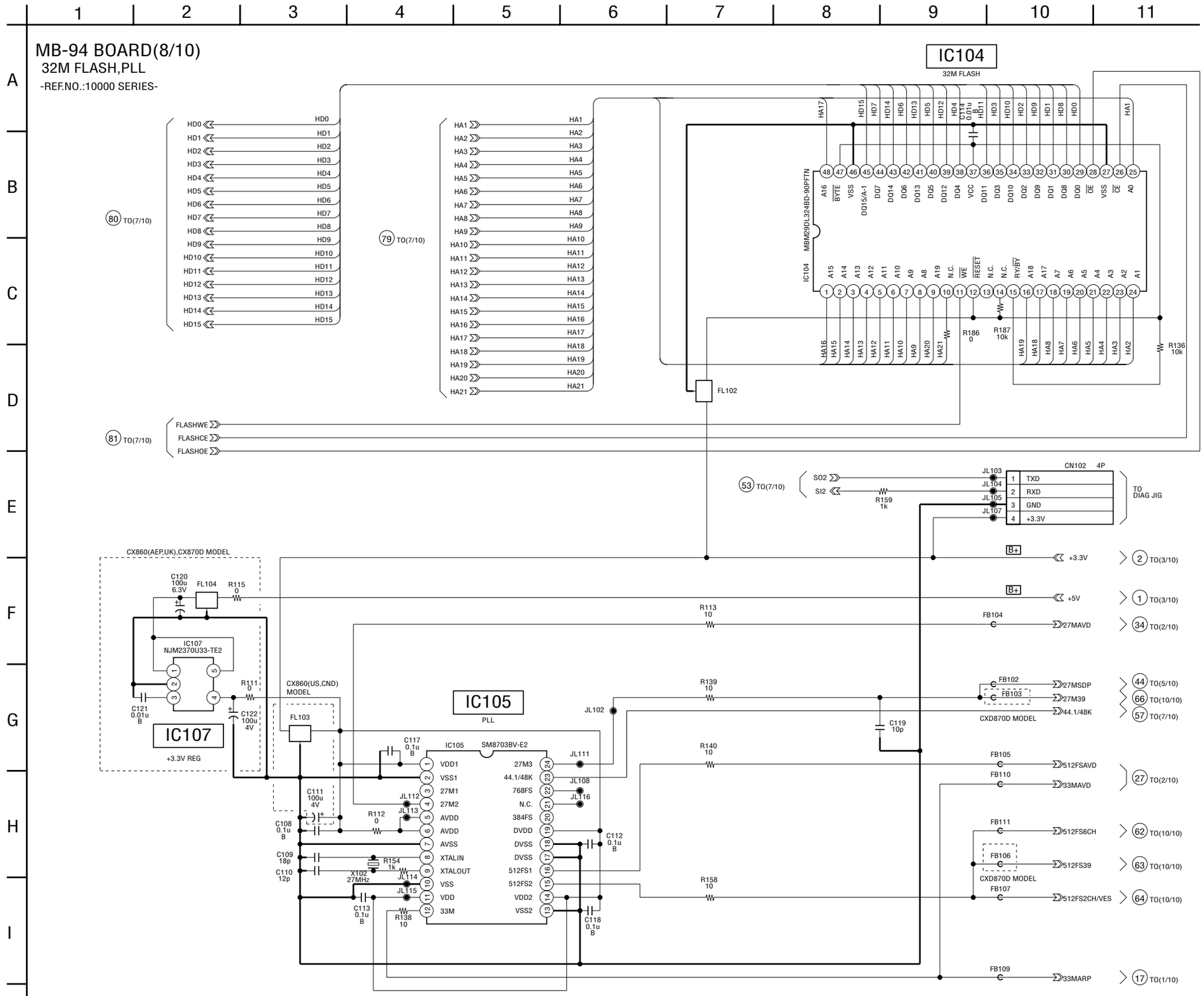
IC103 PST9126NL RESET

AEP/UK MODEL

R126 3300(CX860 MODEL) 2200(CX870D MODEL)

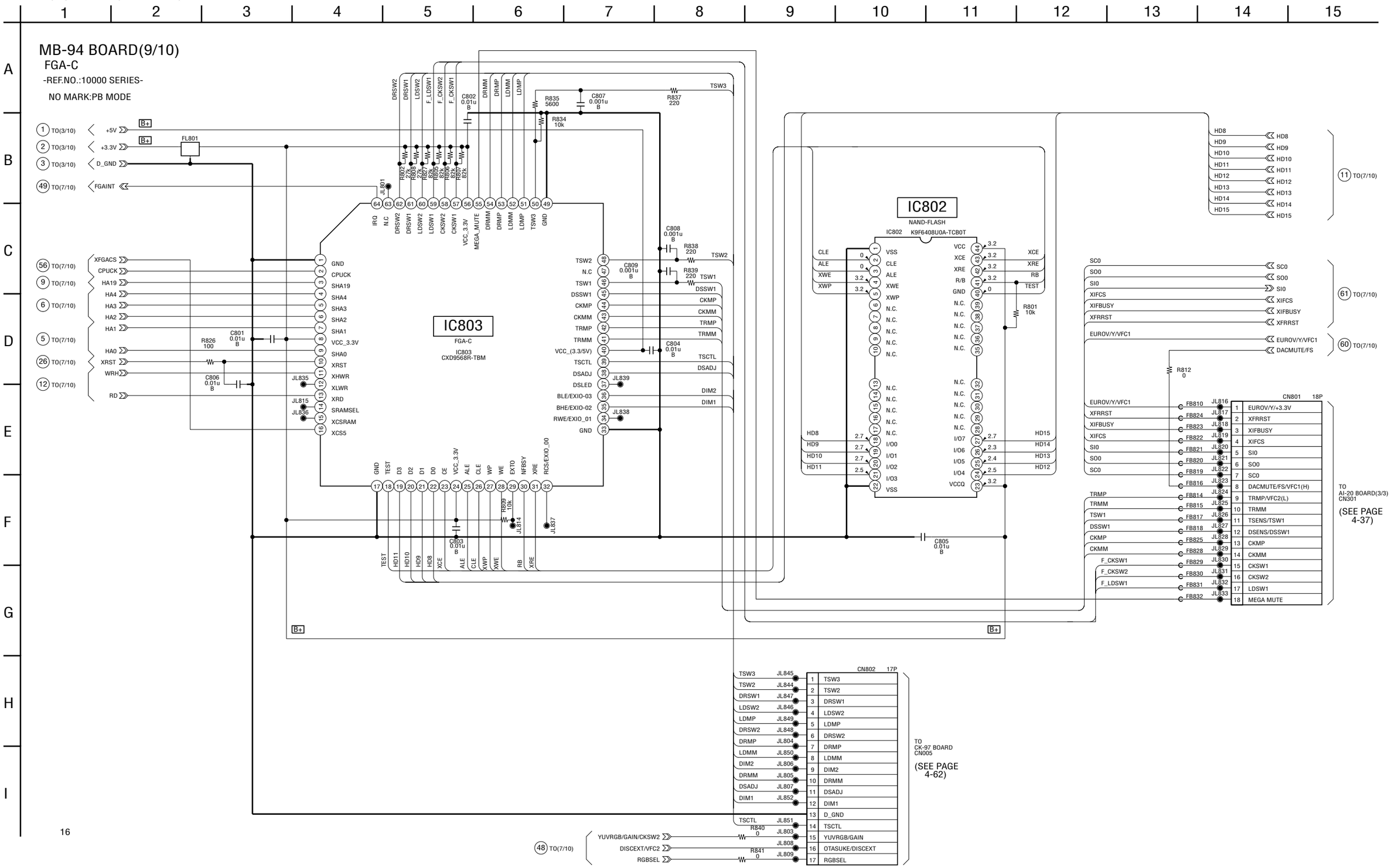
For Schematic Diagram

• Refer to page 4-11 for printed wiring board.



For Schematic Diagram

• Refer to page 4-11 for printed wiring board.



For Schematic Diagram

• Refer to page 4-11 for printed wiring board.

MB-94 BOARD(10/10)

AUDIO

-REF.NO.:10000 SERIES-

NO MARK:PB MODE

CX870D MODEL

CX860 MODEL

IC701

DSP

IC701
CXD1939R

MB-94 BOARD (10/10)

20 IC701 49

22.579 MHz

4.1Vp-p

21 IC701 22

27 MHz

4.7Vp-p

TO AI-20 BOARD(2/3)
CN201
(SEE PAGE 4-35)

SIGNAL PATH

	AUDIO SIGNAL
PB	⇨

For Schematic Diagram

• Refer to page 4-39 for printed wiring board.

AI-20 BOARD(1/3)

VIDEO

-REF.NO.:3000 SERIES-

NO MARK:PB MODE

IC103

VIDEO BUFFER

IC103 LA7109-TLM

IC101

1.8V REG

IC101 PQ018EZ01ZP

IC102

-5V REG

IC102 L79M05T-FA-TL

CN102 28P

CN104 15P

CN103 15P

CN101 15P

TO MB-94 BOARD(3/10) CN502 (SEE PAGE 4-18)

TO CV-34 BOARD CN501 (SEE PAGE 4-57)

TO ER-12 BOARD CN901 (SEE PAGE 4-53)

TO POWER BLOCK (MPW1241:US,CND MODEL) (MPW1141:AEP,UK MODEL) CN101 (SEE PAGE 4-82)

AEP,UK MODEL

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
PB	⇨	⇨	⇨

AI-20 BOARD (1/3)

① IC103 ㉟ — 2.8Vp-p, H

② IC103 ㉝ — 1.9Vp-p, H

③ IC103 ㉛ — 2.2Vp-p, H

④ IC103 ㉕ — 2.2Vp-p, H

⑤ IC103 ㉓ — 1.5Vp-p, H

⑥ IC103 ㉑ — 1.5Vp-p, H

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

For Schematic Diagram

• Refer to page 4-39 for printed wiring board.

AI-20 BOARD(2/3)
2.6CH AU10
-REF.NO.:3000 SERIES-
NO MARK:PB MODE

The mount table of the parts with asterisk(*) is shown on page 4-83

IC203 VES
IC204 2CH-DAC
IC205 LFE-DAC
IC206 +8V REG
IC207 +5V REG
IC208 FL/FR
IC209 SL/SR
IC210 C/SW.SW
IC202 6CH DAC

TO MB-94 BOARD(10/10) CN702
(SEE PAGE 4-32)

TO CH-98 BOARD CN401 (SEE PAGE 4-49)
TO CH-98 BOARD CN402 (SEE PAGE 4-49)
AEP,UK MODEL
TO ER-12 BOARD CN902 (SEE PAGE 4-53)

SIGNAL PATH

	AUDIO SIGNAL
REC	
PB	⇨

AI-20 BOARD (2/3)

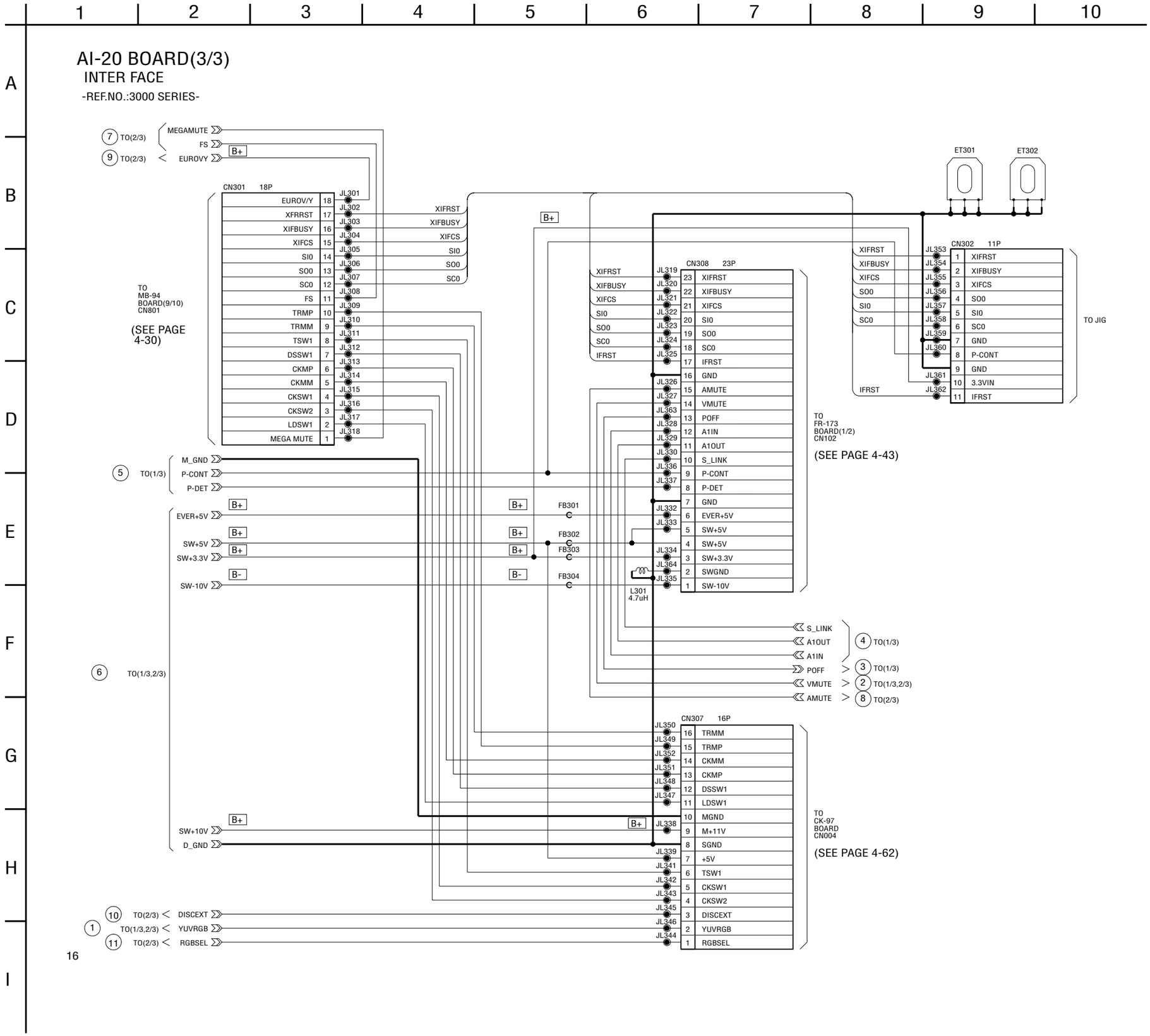
⑦ IC204 ⑥

22.579 MHz

4.5Vp-p

For Schematic Diagram

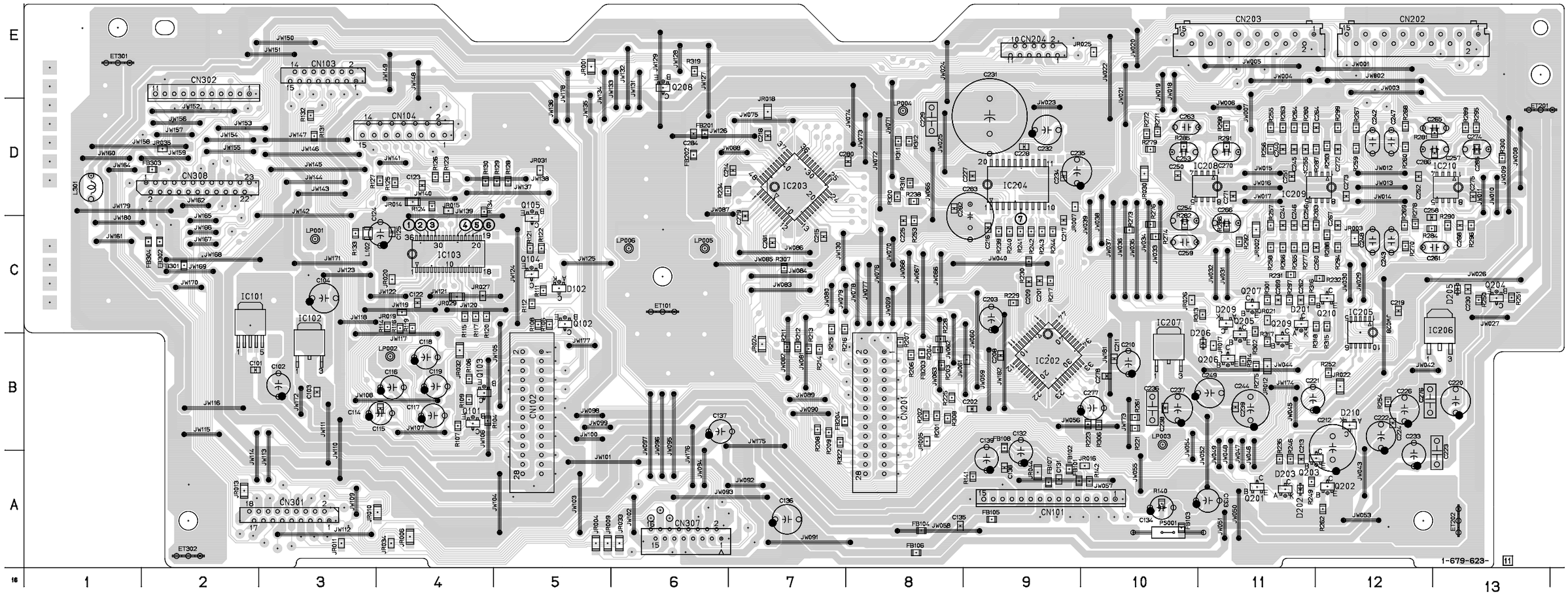
• Refer to page 4-39 for printed wiring board.

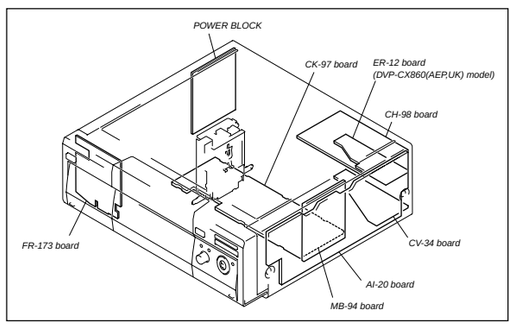


AI-20 (VIDEO, 2.6CH AUDIO, INTERFACE) PRINTED WIRING BOARD

— Ref. No. AI-20 Board; 3,000 Series —

AI-20 BOARD(SIDE B)





For printed wiring board

- AI-20 board consists of multiple layers. However, only the side (layers) B is shown.
- Chip parts

Diode

There are a few cases that the part printed on this diagram isn't mounted in this model.

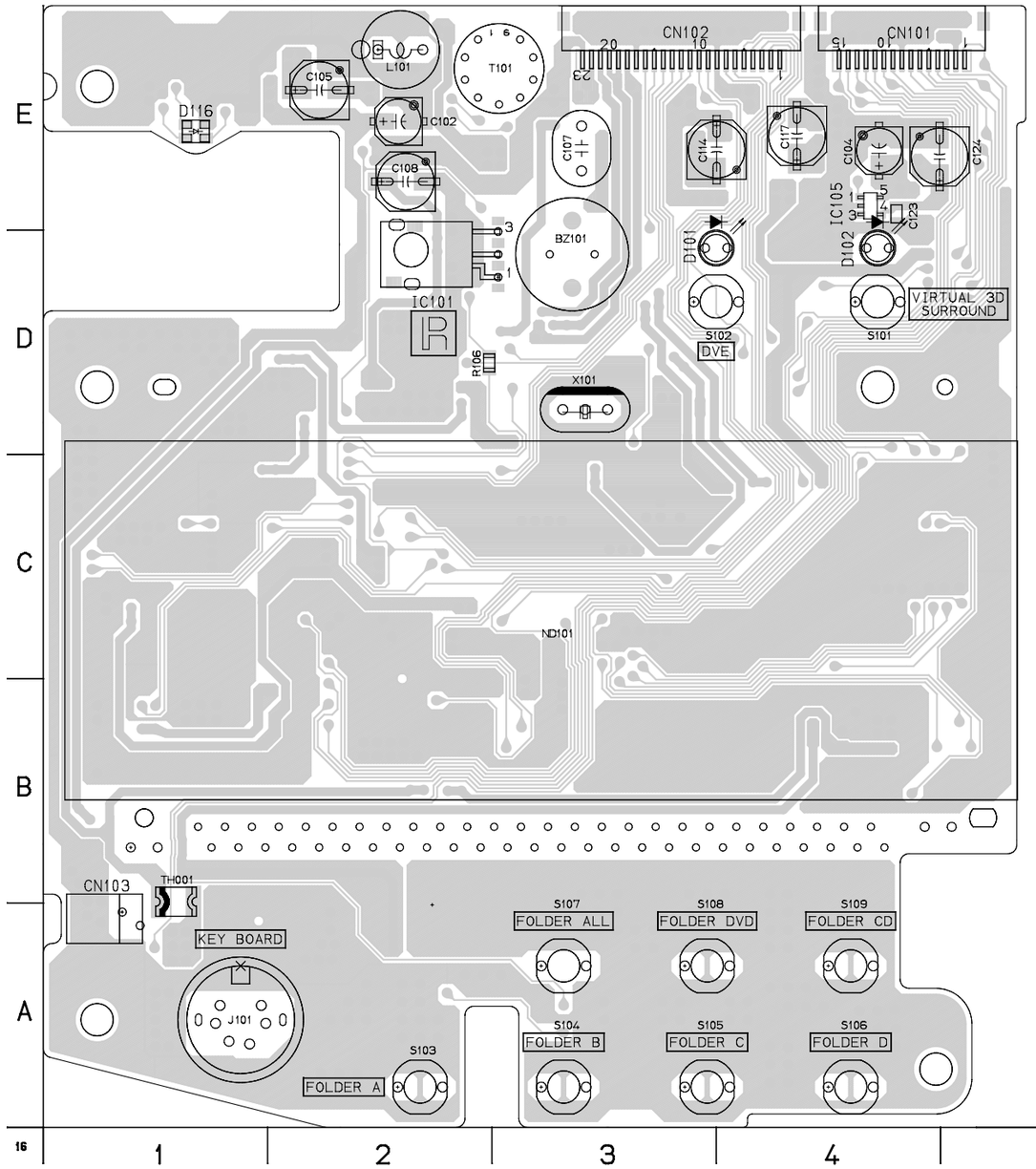
AI-20 BOARD (SIDE B)

D102	C-19	IC205	B-26	Q204	C-27
D202	A-25	IC206	B-26	Q205	B-25
D203	A-25	IC207	B-24	Q206	B-25
D204	C-25	IC208	D-24	Q207	C-25
D205	C-27	IC209	D-25	Q208	E-20
D206	B-24	IC210	D-26	Q209	B-25
D209	C-25			Q210	C-25
D210	B-26	Q102	C-19		
		Q103	B-18		
IC101	C-16	Q104	B-18		
IC102	B-17	Q104	C-19		
IC103	C-18	Q105	C-19		
IC202	B-23	Q201	A-25		
IC203	D-21	Q202	A-25		
IC204	D-23	Q203	A-25		

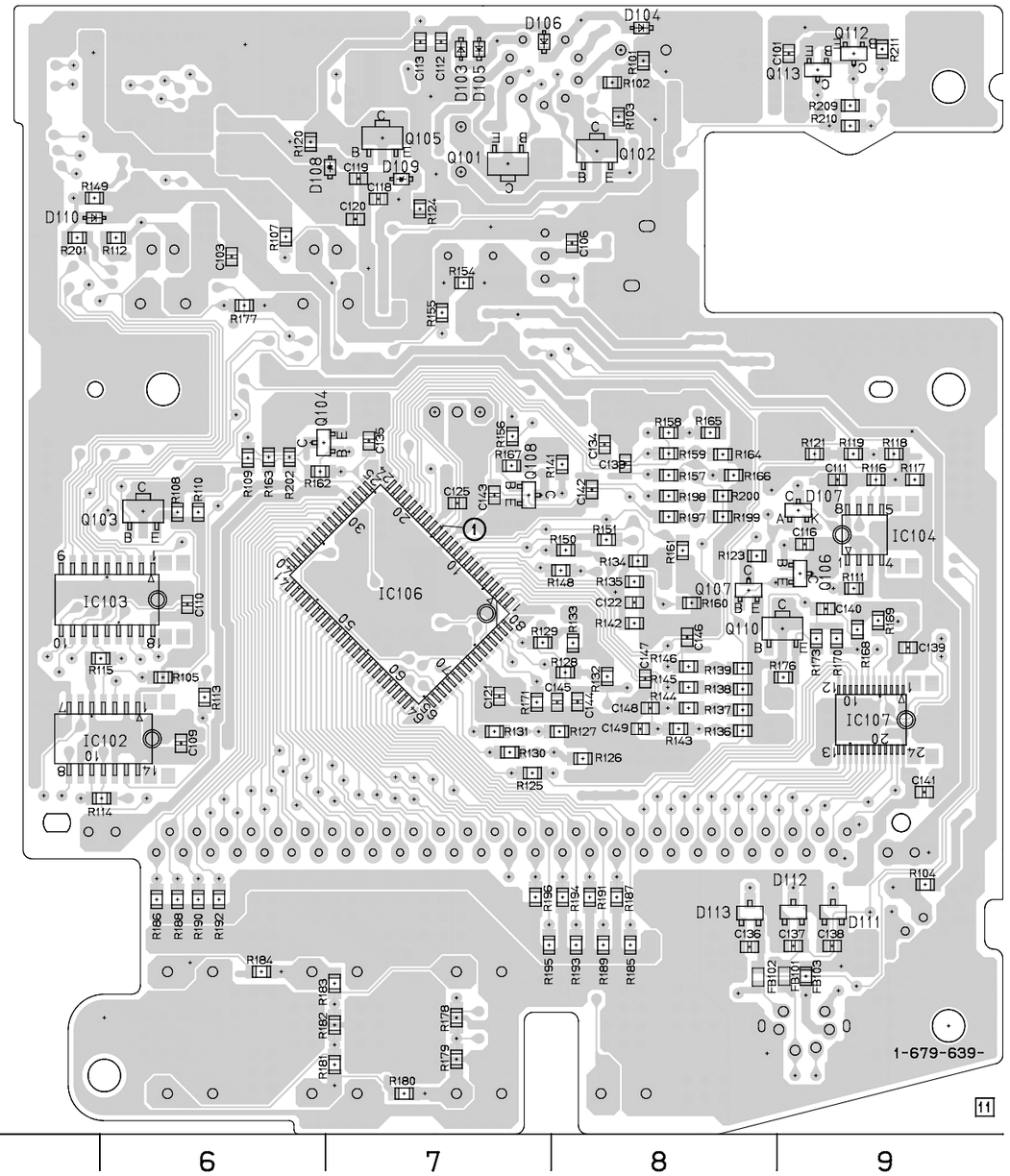
FR-173 (IF COM, KEY BOARD JACK, FLD), LE-30 (DOLBY LED) PRINTED WIRING BOARDS

— Ref. No. FR-173, LE-30 Boards; 1,000 Series —

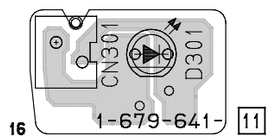
FR-173 BOARD(SIDE A)



FR-173 BOARD(SIDE B)



LE-30 BOARD (SIDE A) (CX870D MODEL)

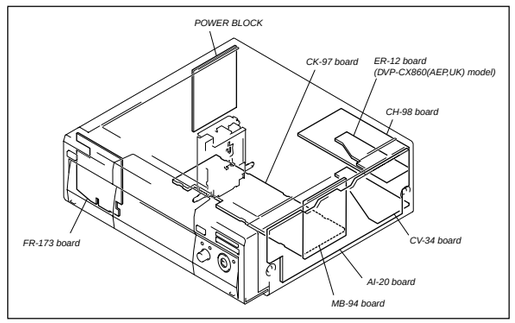


For printed wiring board

- FR-173 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- LE-30 board consists of multiple layers. However, only the side (layers) A is shown.
- Chip parts (FR-173 board)

Diode

There are a few cases that the part printed on this diagram isn't mounted in this model.



FR-173 BOARD (SIDE A)

D101	D-4
D102	D-4
D116	E-1
IC101	D-2
IC105	D-4

FR-173 BOARD (SIDE B)

D103	E-7	IC102	B-6	Q106	C-9
D104	E-8	IC103	C-6	Q107	C-8
D105	E-7	IC104	C-9	Q108	C-7
D106	E-7	IC106	C-7	Q110	C-9
D107	C-9	IC107	B-9	Q112	E-9
D108	E-7			Q113	E-9
D109	E-7	Q101	E-7		
D110	E-5	Q102	E-8		
D111	A-9	Q103	C-6		
D112	A-9	Q104	D-6		
D113	A-8	Q105	E-7		

For Schematic Diagram

• Refer to page 4-41 for printed wiring board.

FR-173 BOARD(1/2)
IF COM
-REF.NO.:4000 SERIES-
NO MARK:PB MODE

LE-30 BOARD
DOLBY LED
-REF.NO.:2000 SERIES-

IC102 AND GATE

IC103 S/P CONV

IC101 REMOTE SENSOR

IC104 S-LINE I/F

IC105 RESET

IC106 IF COM
IC106 M38B57M6-159FP

TO FL-115 BOARD CN403 (SEE PAGE 4-77)

TO AI-20 BOARD(3/3) CN308 (SEE PAGE 4-38)

FR-173 BOARD

① IC106 ⑮

4.0 MHz 4.5Vp-p

For Schematic Diagram

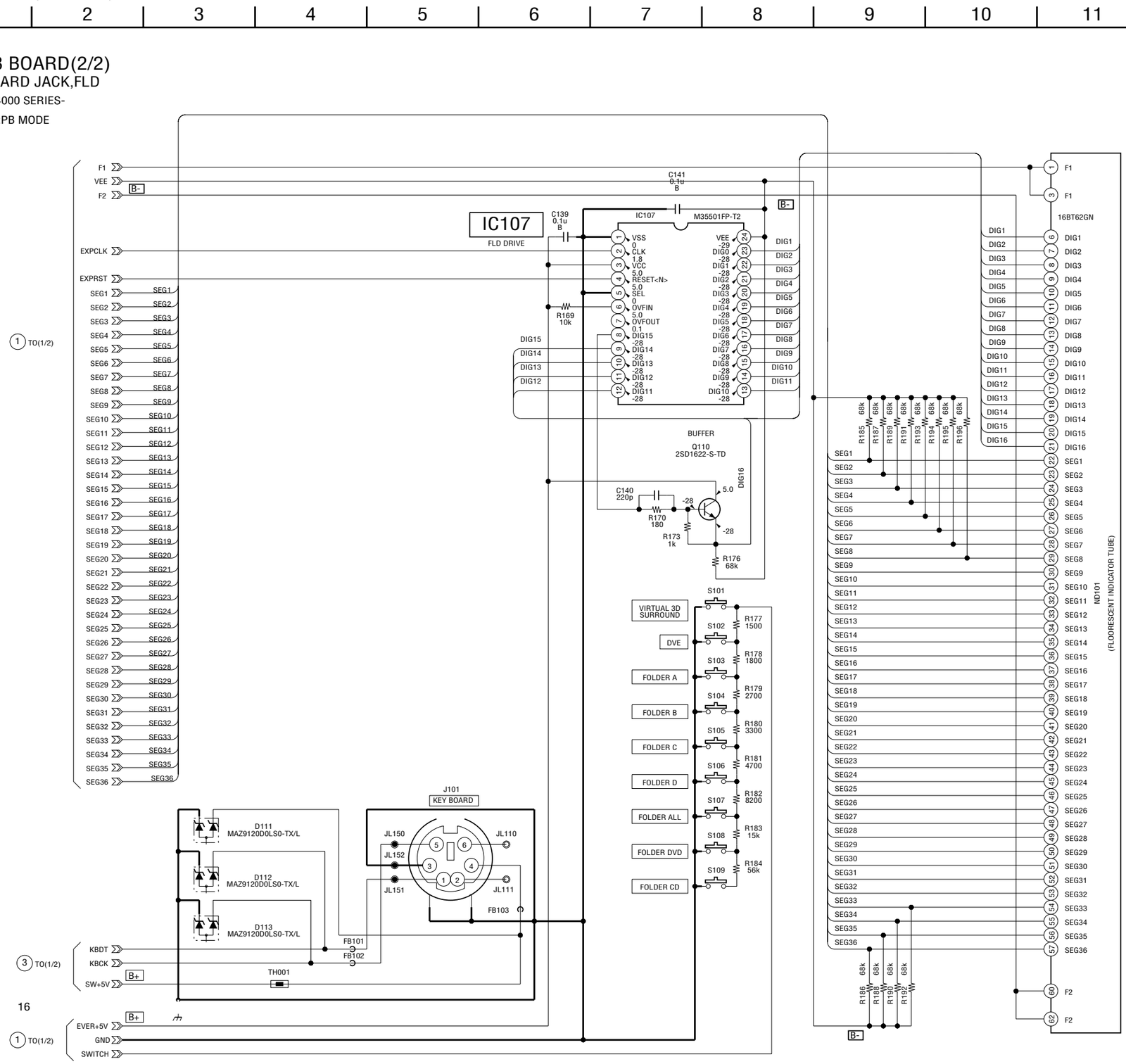
• Refer to page 4-41 for printed wiring board.

FR-173 BOARD(2/2)

KEY BOARD JACK,FLD

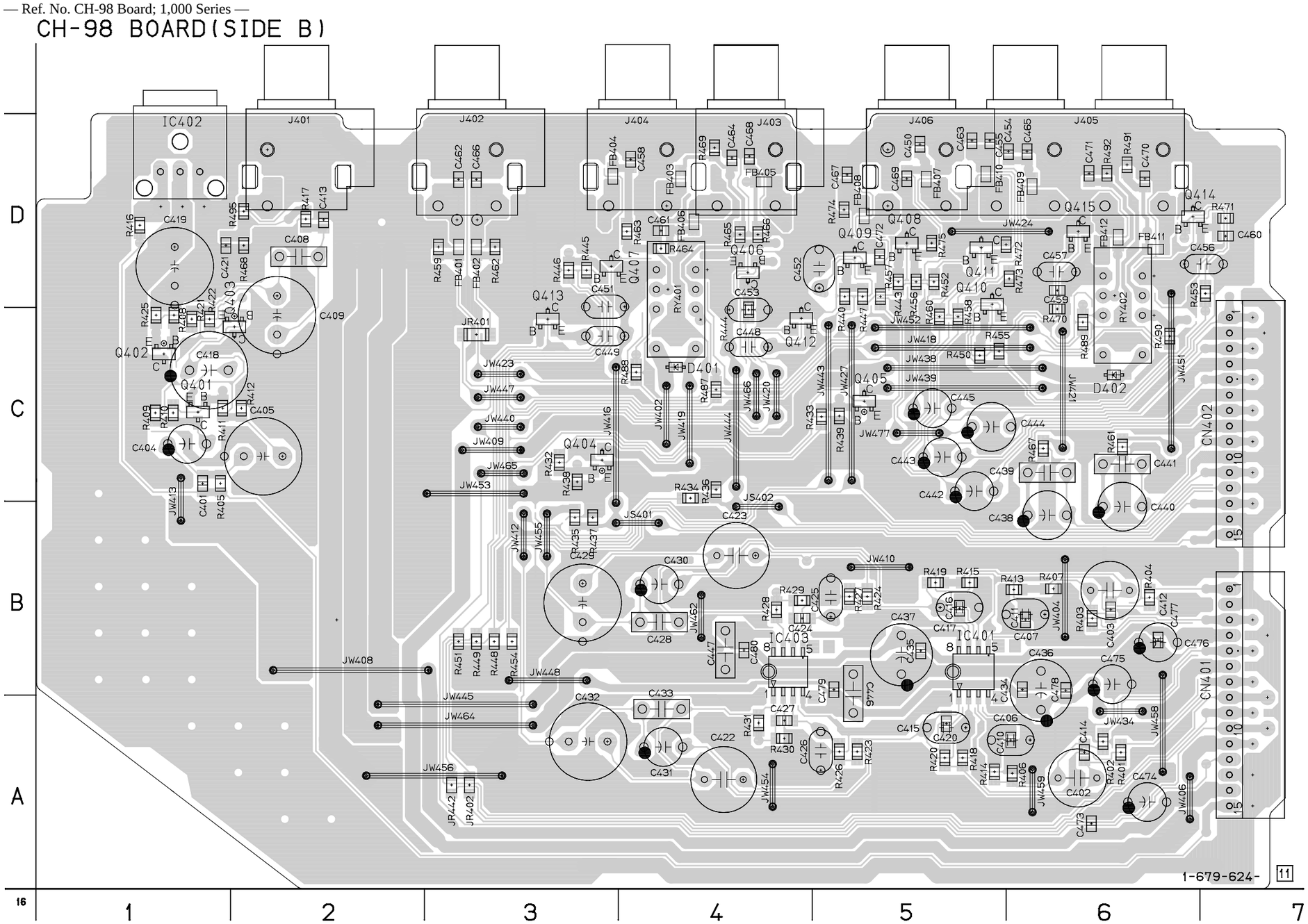
-REF.NO.:4000 SERIES-

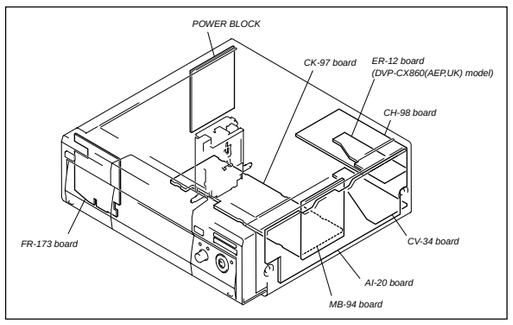
NO MARK:PB MODE



CH-98 (AUDIO) PRINTED WIRING BOARD

— Ref. No. CH-98 Board; 1,000 Series —





For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

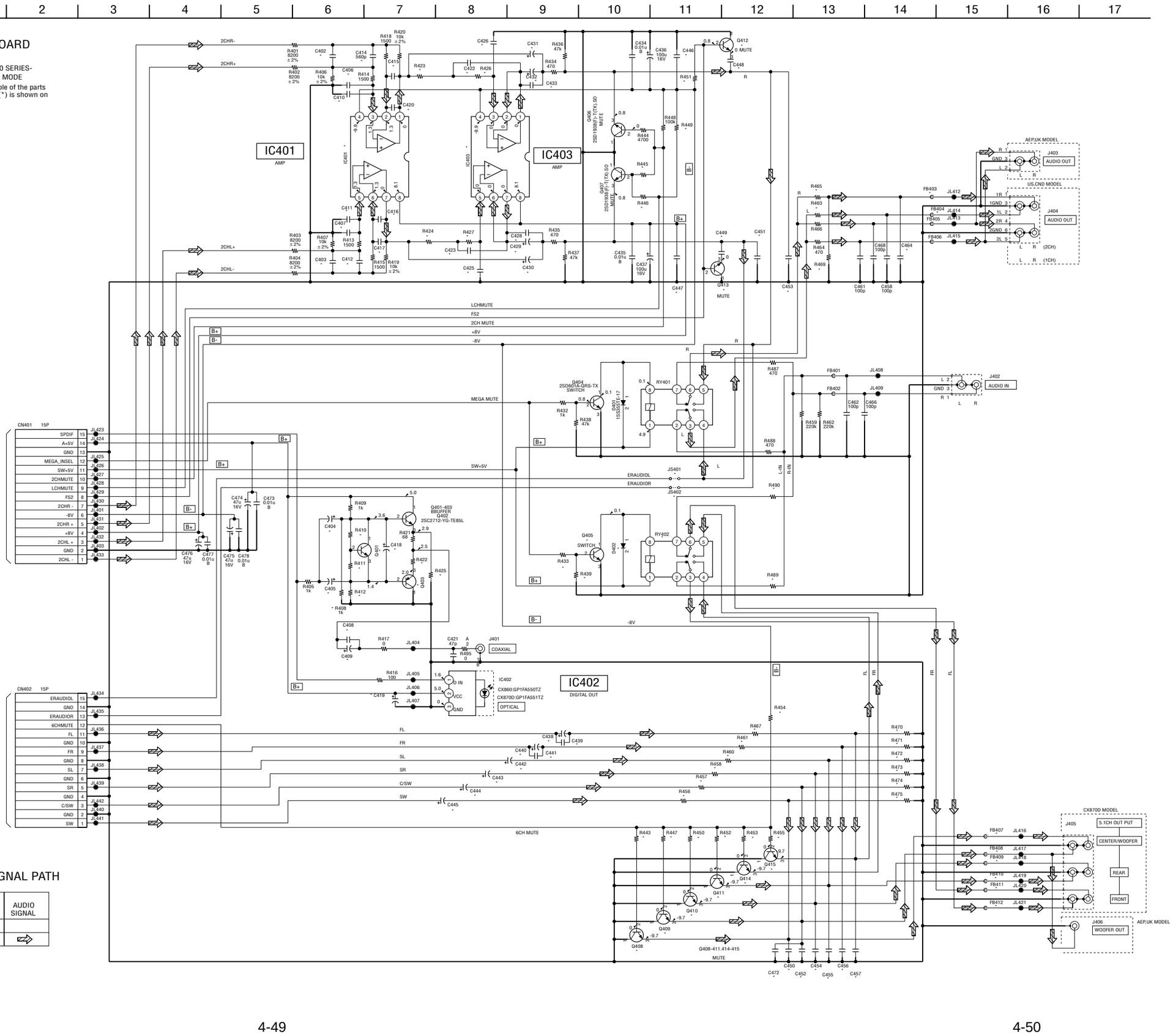
CH-98 BOARD (SIDE B)

D401	C-3	Q407	D-3
D402	C-6	Q408	D-5
		Q409	D-4
IC401	B-5	Q410	D-5
IC402	D-1	Q411	D-5
IC403	B-4	Q412	C-4
		Q413	C-3
Q401	C-1	Q414	D-6
Q402	C-1	Q415	D-6
Q403	C-2		
Q404	C-3		
Q405	C-4		
Q406	D-4		

CH-98 BOARD
AUDIO

-REF.NO.:1000 SERIES-
NO MARK:PB MODE

The mount table of the parts with asterisk (*) is shown on Page 4-84.

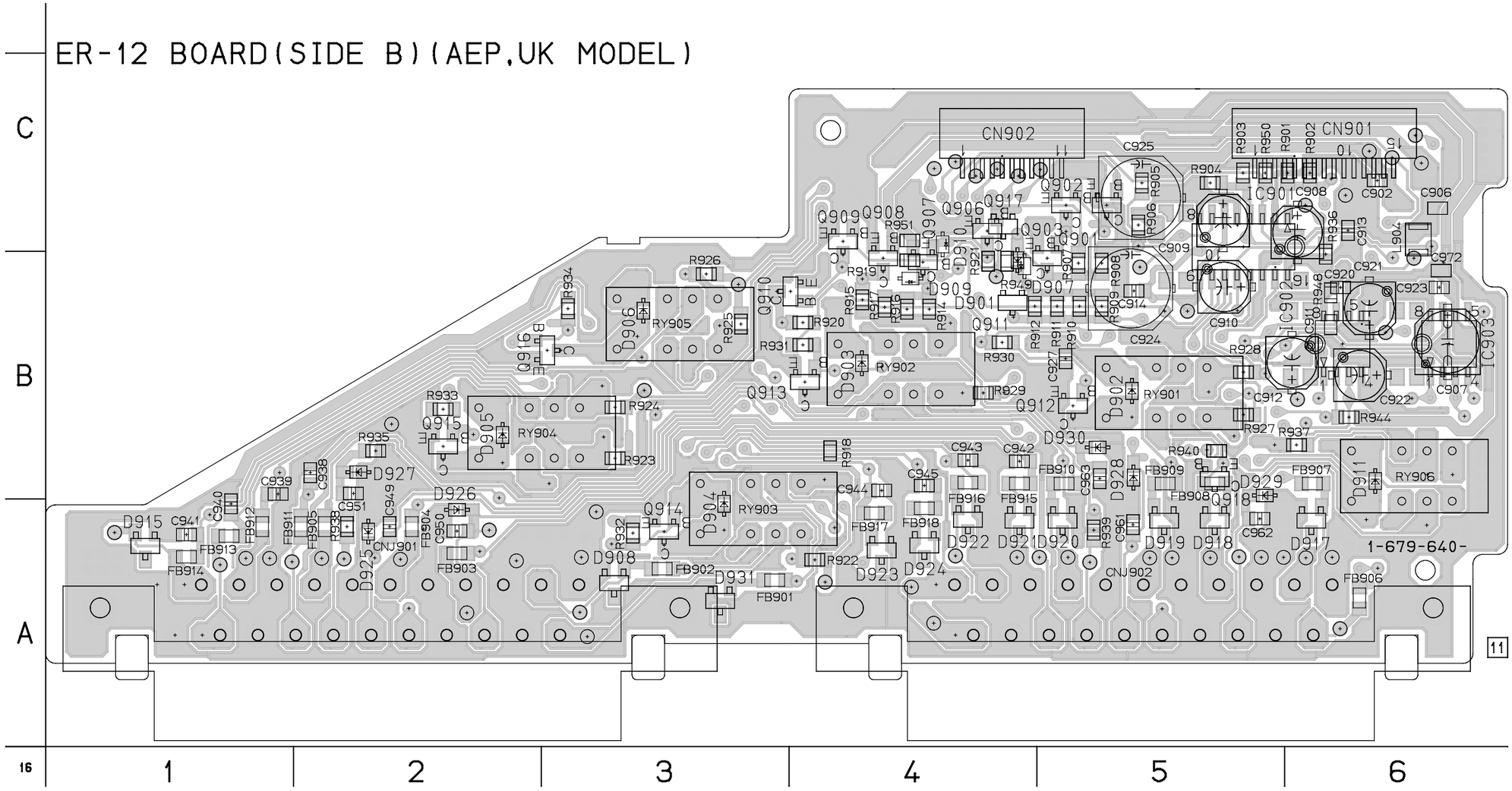


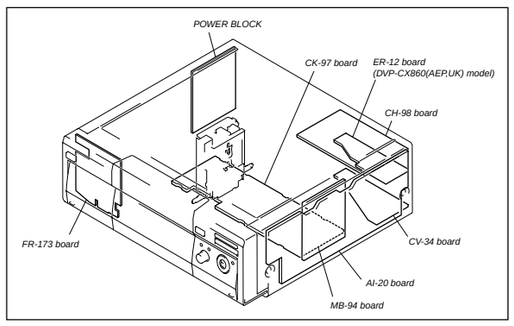
SIGNAL PATH

	AUDIO SIGNAL
PB	⇨

ER-12 (EURO AV) PRINTED WIRING BOARD

— Ref. No. ER-12 Board; 1,000 Series —





For printed wiring board

- ER-12 board consists of multiple layers. However, only the side (layers) B is shown.
- Chip parts

Diode

There are a few cases that the part printed on this diagram isn't mounted in this model.

ER-12 BOARD (SIDE B)

D901	B-4	D930	A-5
D902	B-5	D931	A-3
D903	B-4		
D904	A-3	IC901	B-5
D905	A-2	IC902	B-6
D906	B-3	IC903	B-6
D907	B-4		
D908	A-3	Q901	B-5
D909	B-4	Q902	B-5
D910	C-4	Q903	B-5
D911	A-6	Q906	B-4
D915	A-1	Q907	B-4
D917	A-6	Q908	B-4
D918	A-5	Q909	B-4
D919	A-5	Q910	B-3
D920	A-5	Q911	B-4
D921	A-4	Q912	A-5
D922	A-4	Q913	B-4
D923	A-4	Q914	A-3
D924	A-4	Q915	A-2
D925	A-2	Q916	B-2
D926	A-2	Q917	C-4
D927	A-2		
D928	A-5		
D929	A-5		

ER-12 BOARD(AEP,UK MODEL)

EURO AV

-REF.NO.:1000 SERIES-

NO MARK:PB MODE

IC901

IC902 R/C SELECTER

IC903 Y/V SELECTER

TO AI-20 BOARD(1/3) CN103 (SEE PAGE 4-34)

TO AI-20 BOARD CN204 (SEE PAGE 4-36)

CNJ901 LINE-2

CNJ902 LINE-1(RGB)-TV

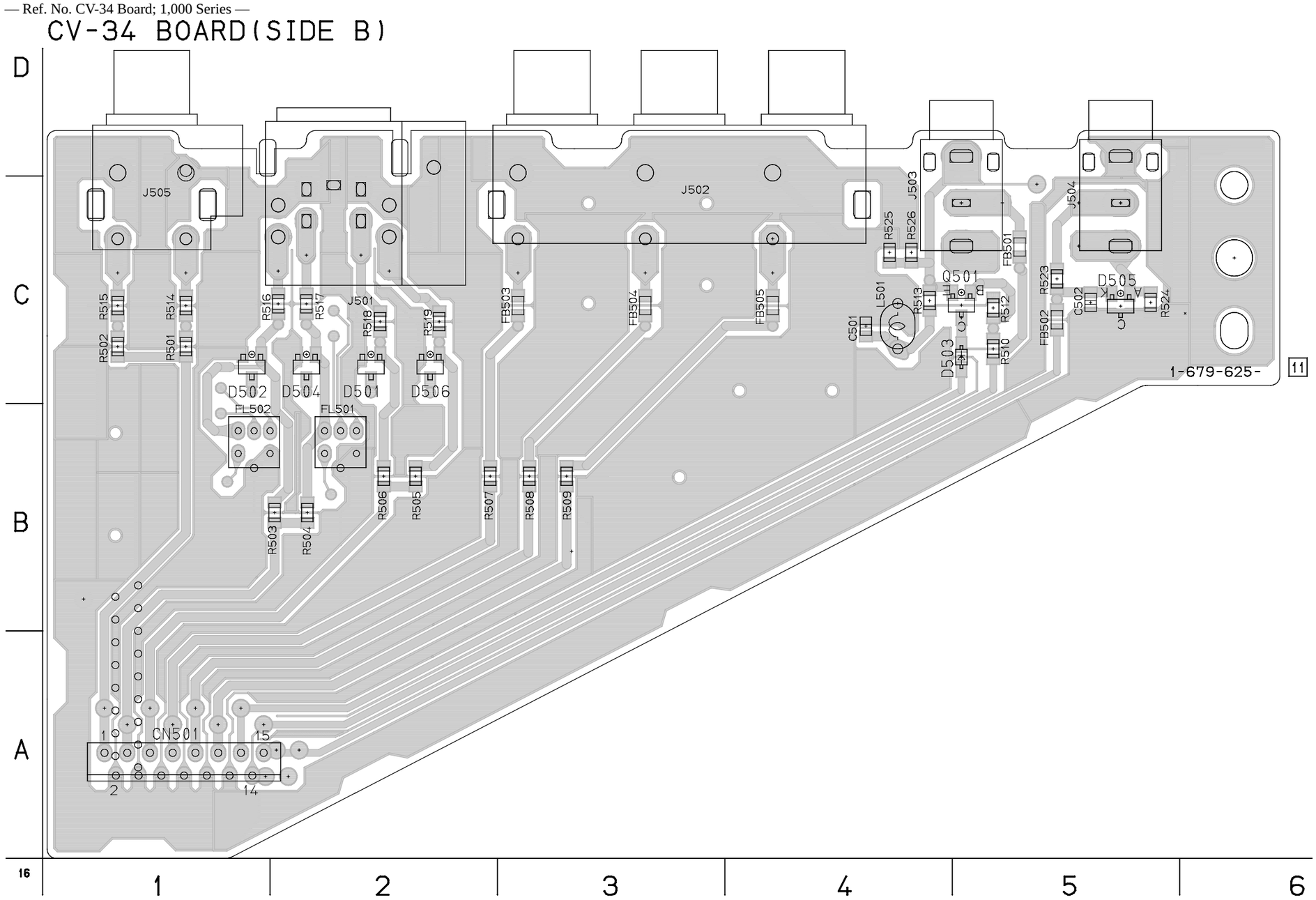
Q912-918 RY DRIVE

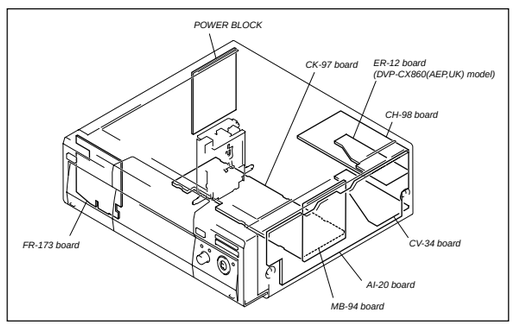
SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
PB	⇨	⇨	⇨

CV-34 (VIDEO OUT) PRINTED WIRING BOARD

— Ref. No. CV-34 Board; 1,000 Series —





For printed wiring board

- CV-34 board consists of multiple layers. However, only the side (layers) B is shown.
- Chip parts

Diode

There are a few cases that the part printed on this diagram isn't mounted in this model.

CV-34 BOARD (SIDE B)

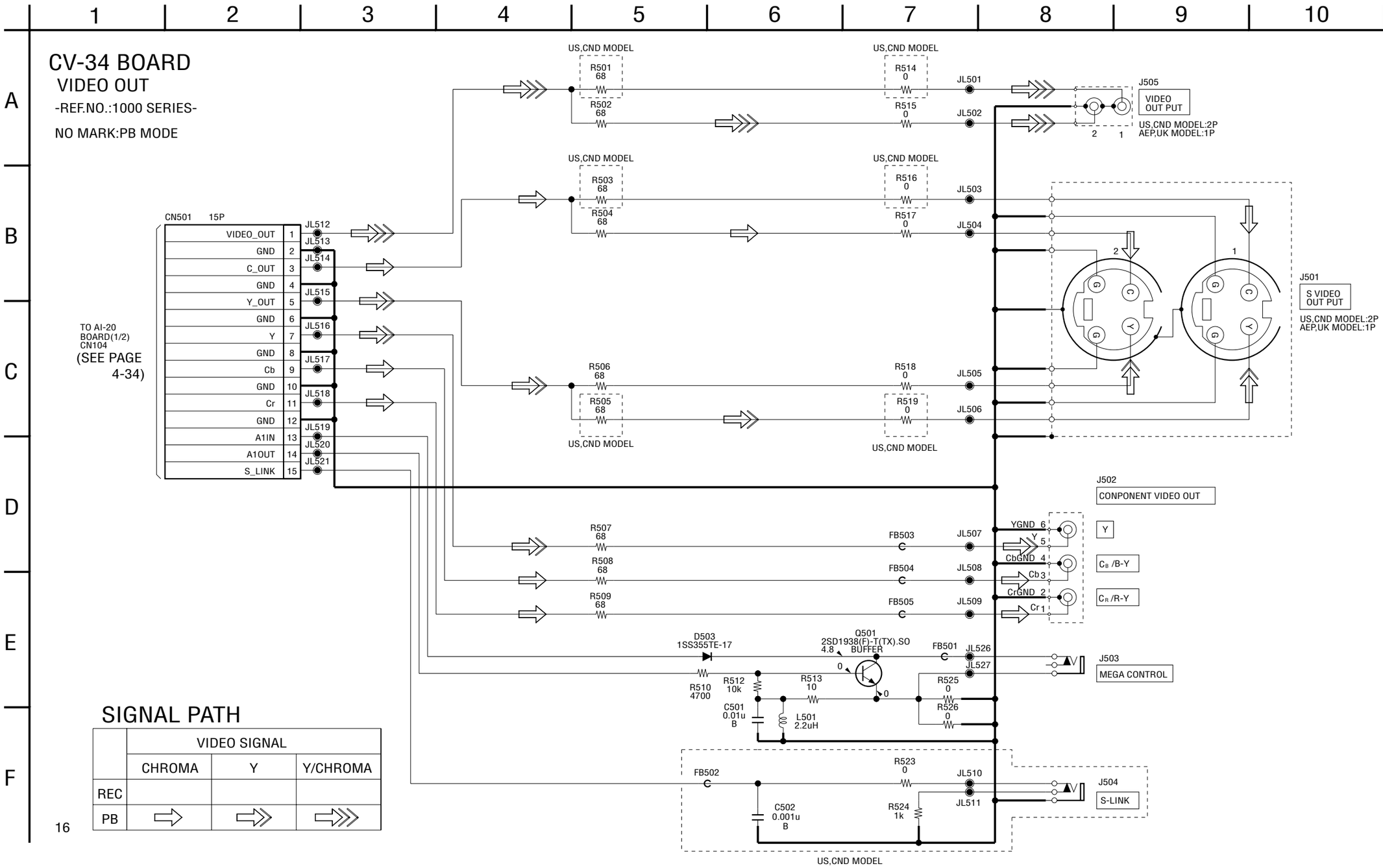
D501	C-7
D502	C-7
D503	C-10
D504	C-7
D505	C-11
D506	C-8
Q501	C-10

CV-34 BOARD

VIDEO OUT

-REF.NO.:1000 SERIES-

NO MARK:PB MODE

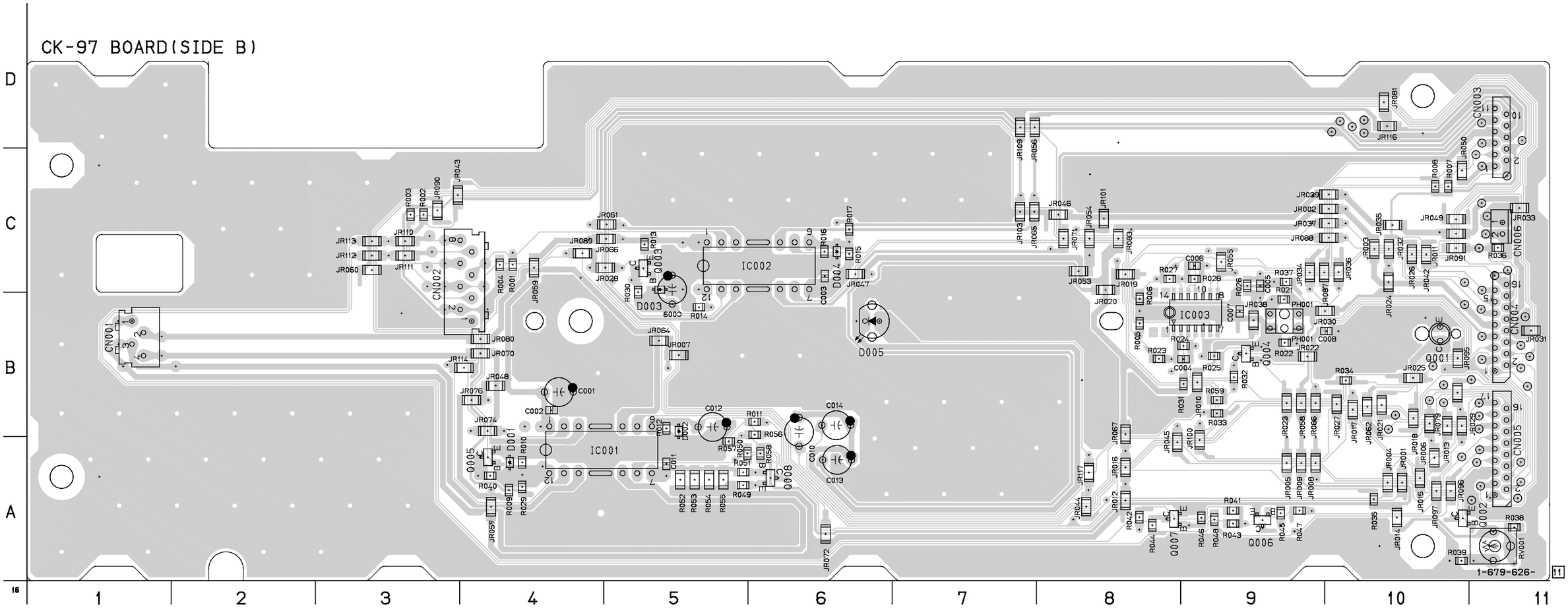


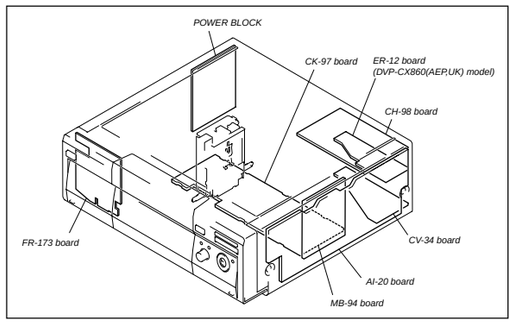
SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB	⇨	⇨	⇨

CK-97 (MOTOR DRIVER) PRINTED WIRING BOARD

— Ref. No. CK-97 Board; 2,000 Series —





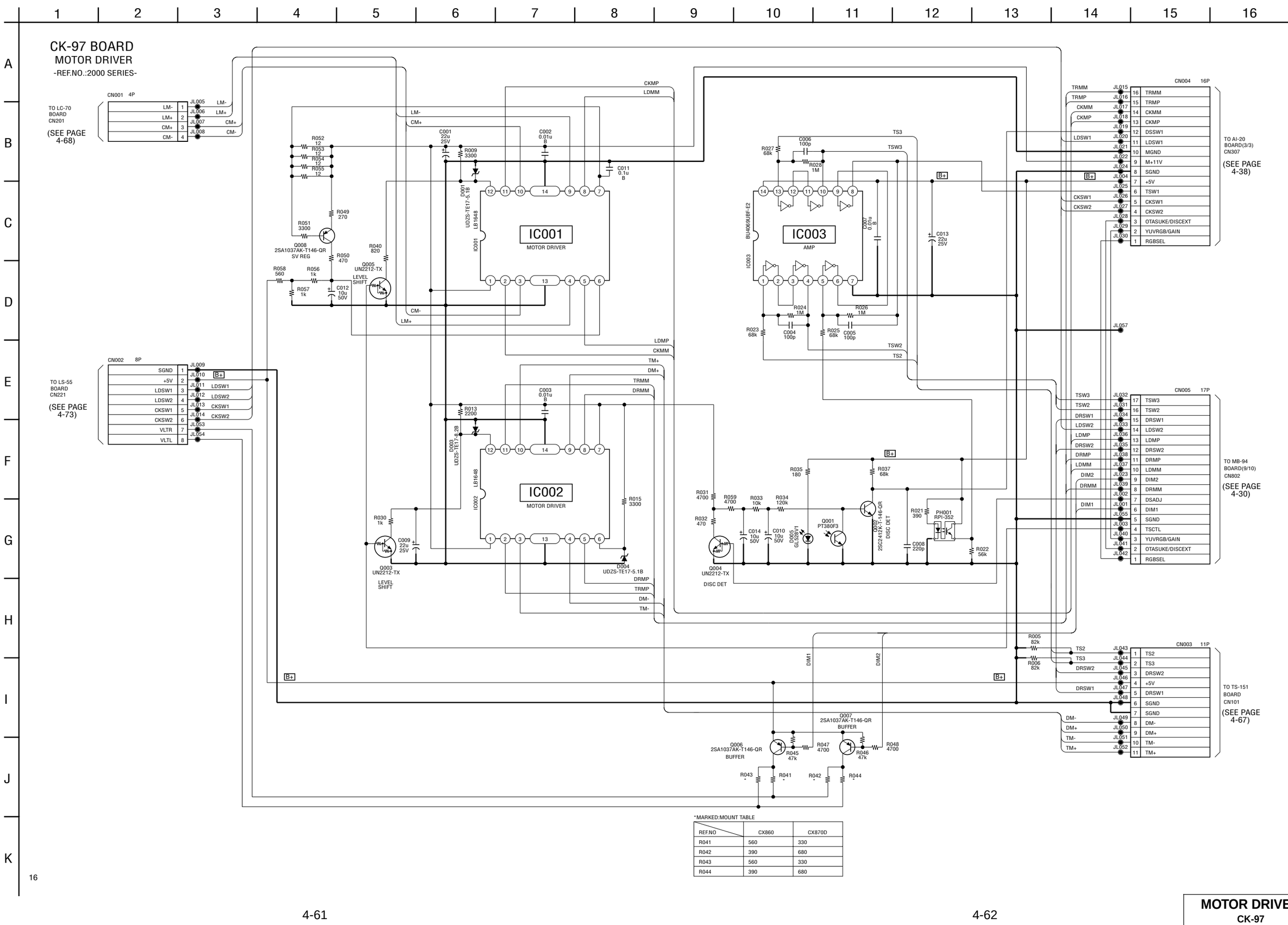
For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

CK-97 BOARD (SIDE B)

D001	A-4
D002	B-5
D003	C-5
D004	C-6
D005	B-6
IC001	A-4
IC002	C-6
IC003	B-9
Q001	B-10
Q002	A-10
Q003	C-5
Q004	B-9
Q005	A-4
Q006	A-9
Q007	A-8
Q008	A-6

CK-97 BOARD
MOTOR DRIVER
-REF.NO.:2000 SERIES-



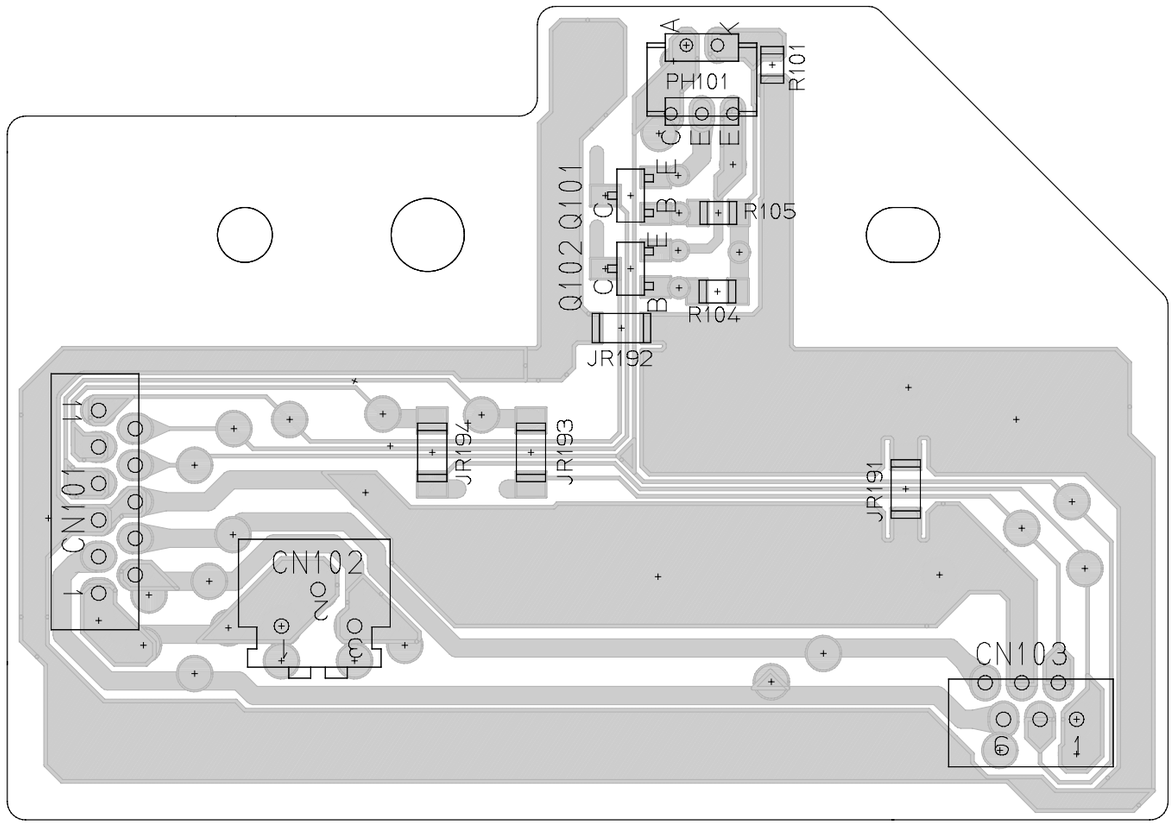
*MARKED:MOUNT TABLE

REF.NO	CX860	CX870D
R041	560	330
R042	390	680
R043	560	330
R044	390	680

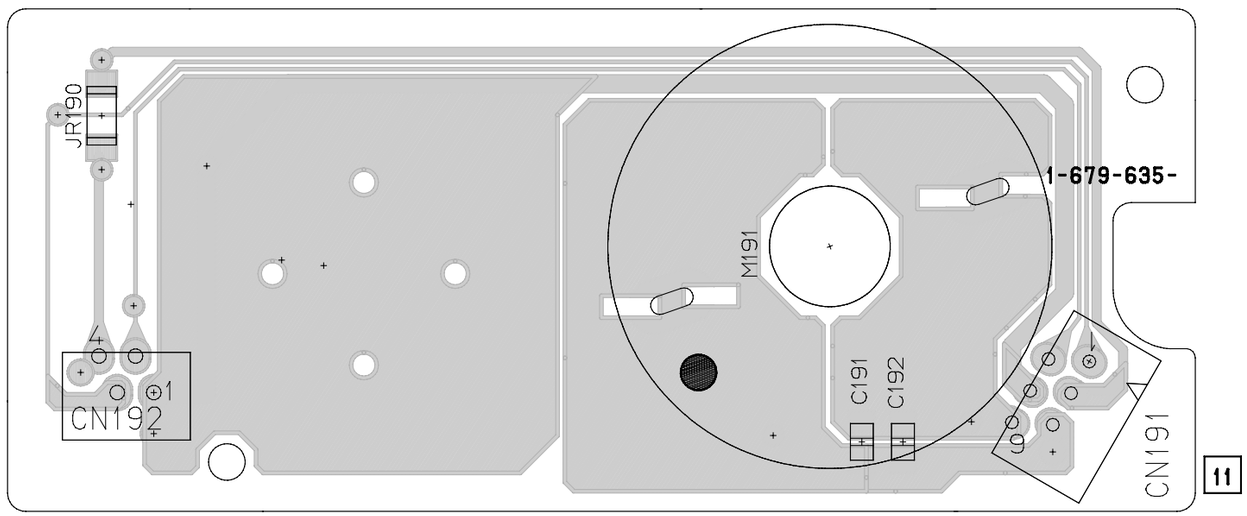
TS-151 (T SENSOR), DM-96 (DOOR MOTOR) PRINTED WIRING BOARDS

— Ref. No. TS-151 Board; 5,000 Series, DM-96 Board; 1,000 Series —

TS-151 BOARD(SIDE B)

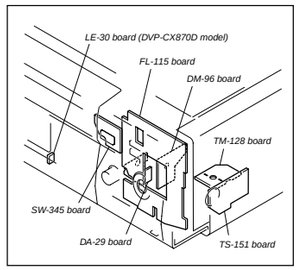


DM-96 BOARD(SIDE B)



For printed wiring board

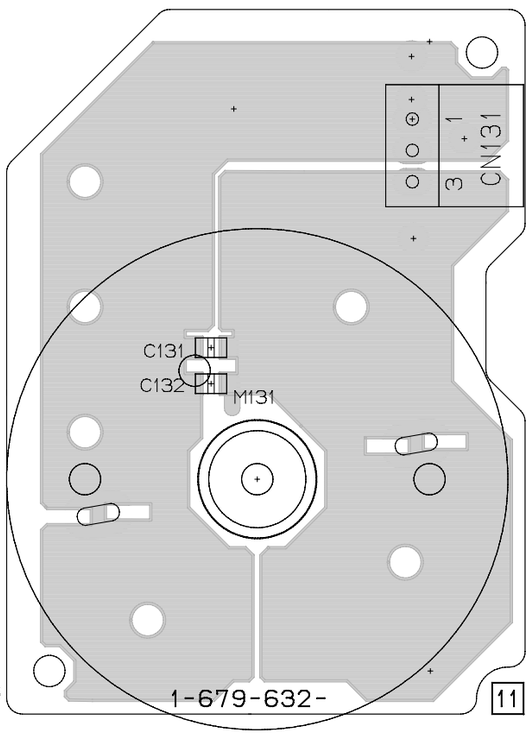
There are a few cases that the part printed on this diagram isn't mounted in this model.



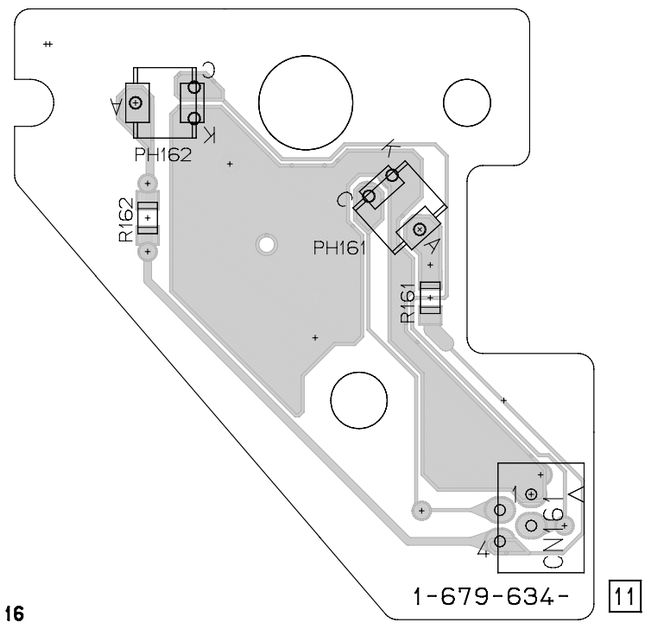
TM-128 (TRAY MOTOR), DA-29 (DR SENSOR), LC-70 (LOADING/CAM MOTOR) PRINTED WIRING BOARDS

— Ref. No. TM-128, DA-29, LC-70 Boards; 1,000 Series —

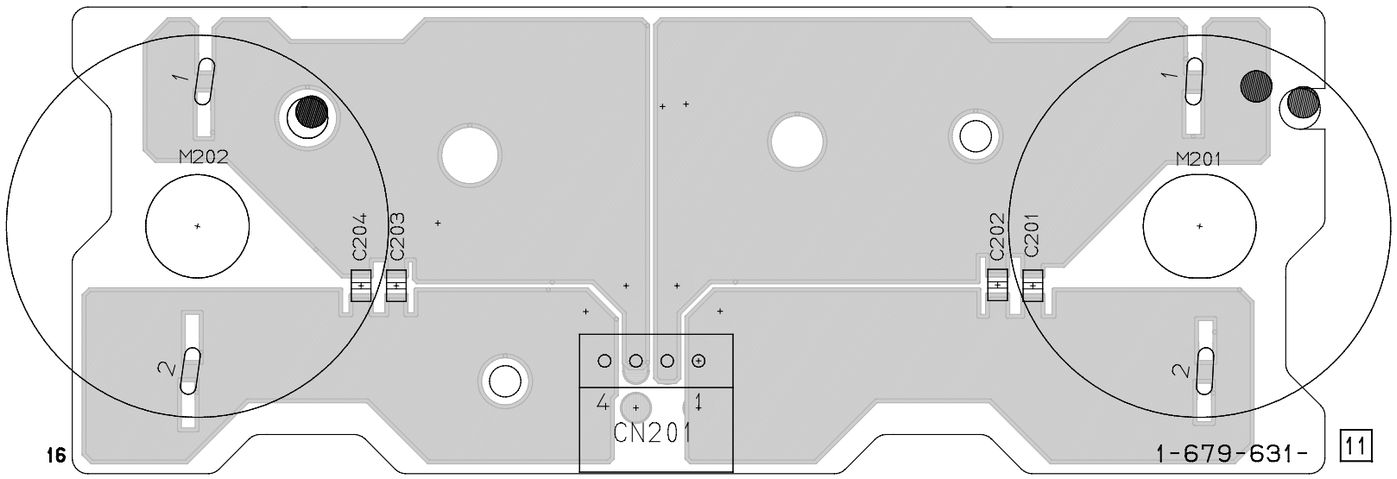
TM-128 BOARD
(SIDE B)



DA-29 BOARD(SIDE B)

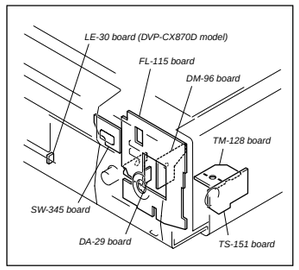


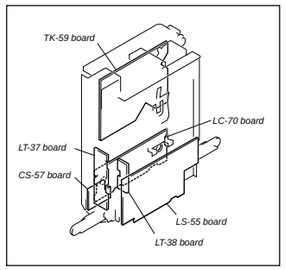
LC-70 BOARD(SIDE B)



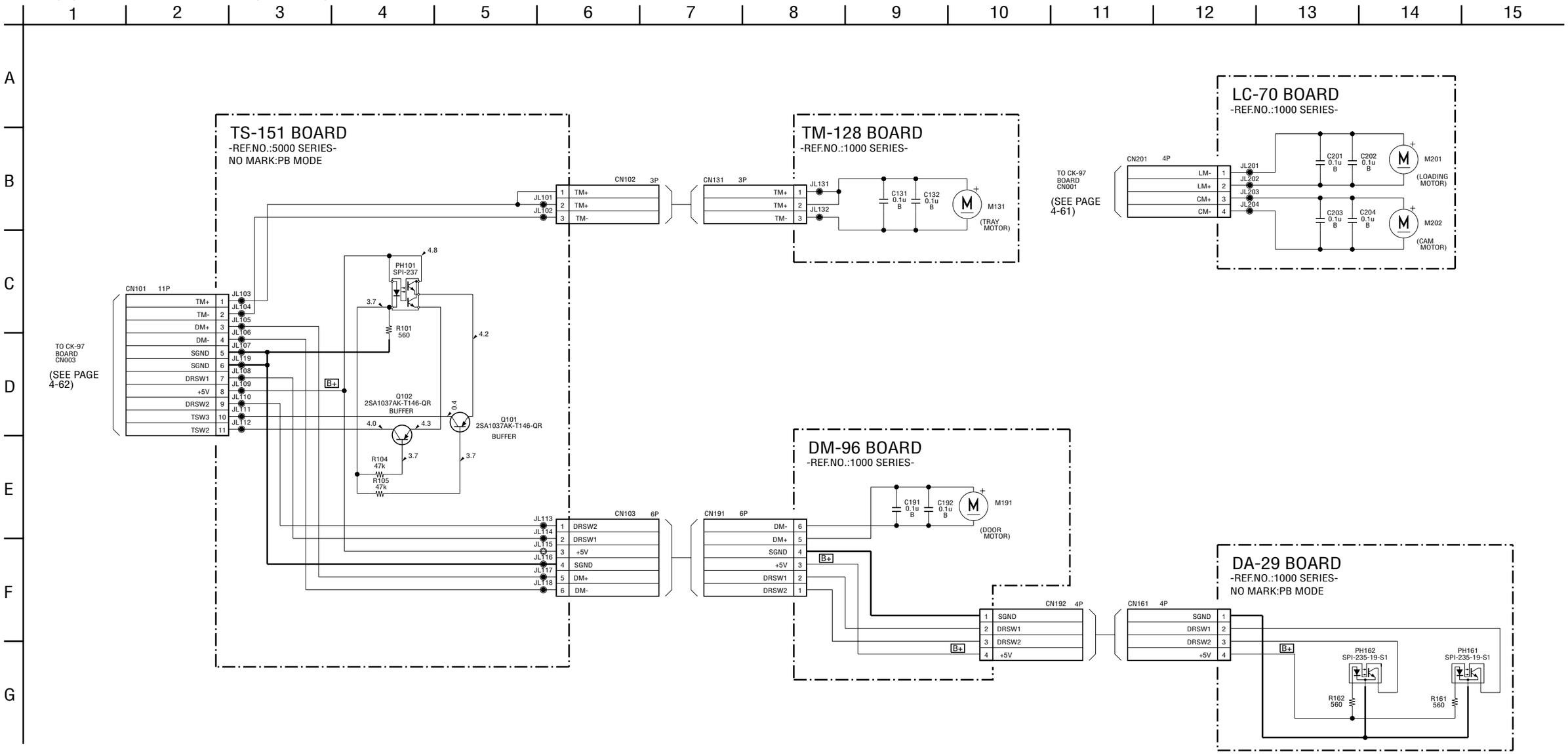
For printed wiring boards

There are a few cases that the part printed on this diagram isn't mounted in this model.



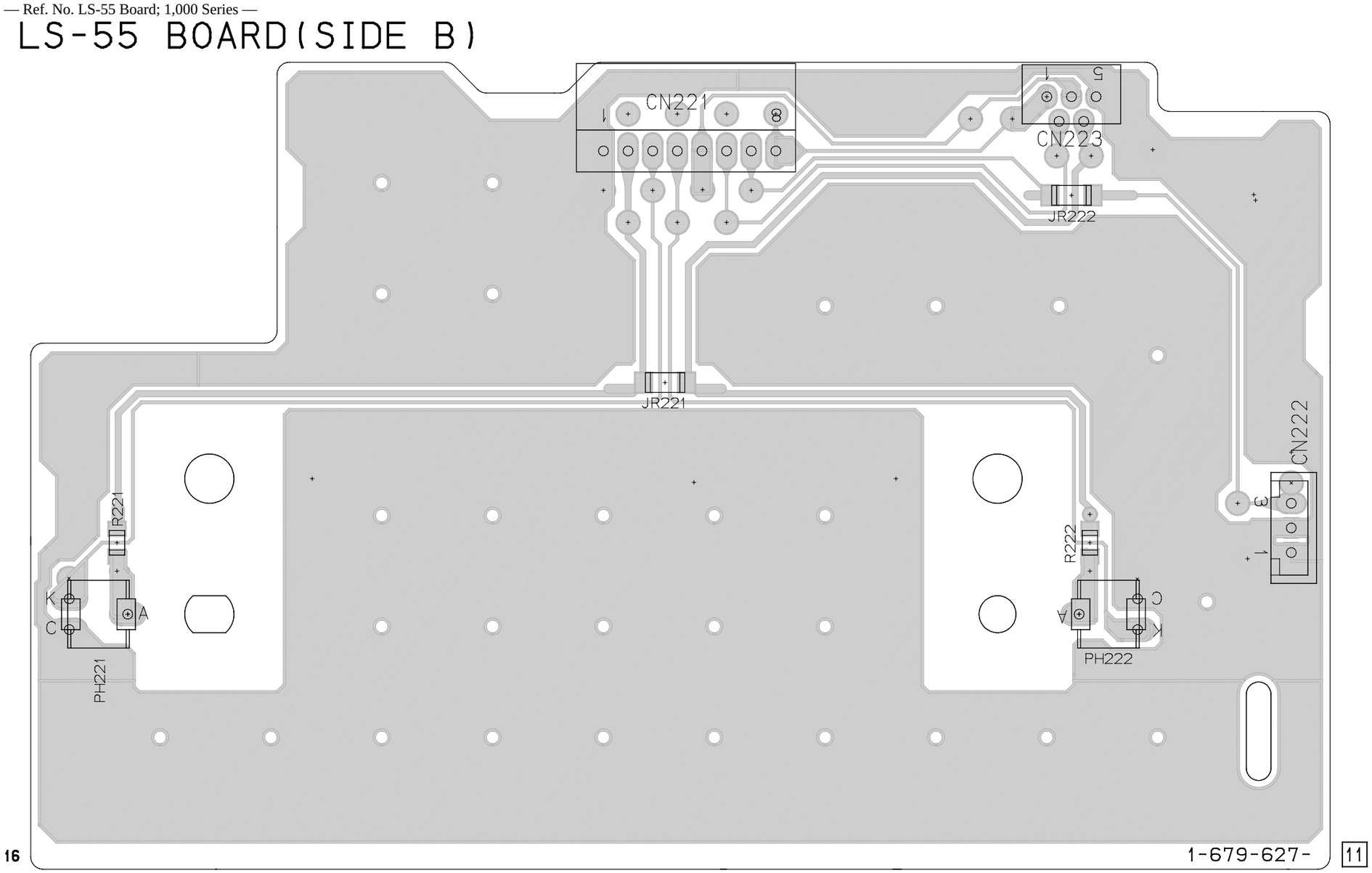


For Schematic Diagram
• Refer to page 4-63 for TS-151, DM-96 printed wiring boards.
• Refer to page 4-65 for TM-128, DA-29, LC-70 printed wiring boards.



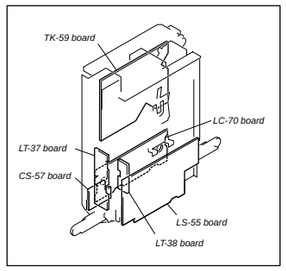
LS-55 (LD SENSOR) PRINTED WIRING BOARD

— Ref. No. LS-55 Board; 1,000 Series —



For printed wiring board

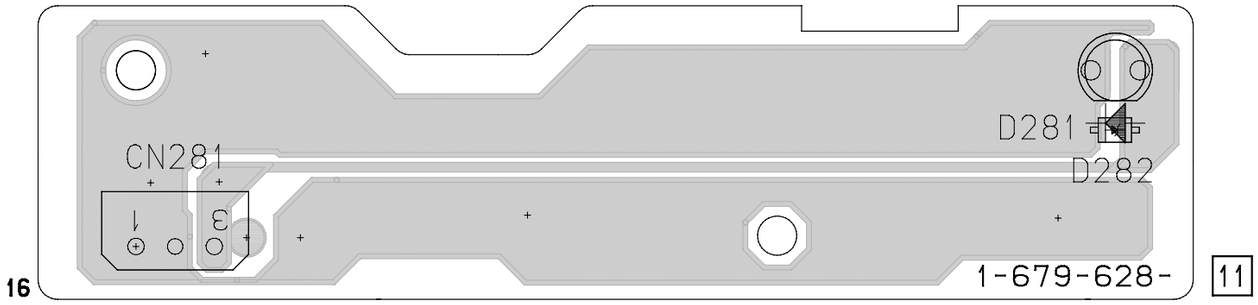
There are a few cases that the part printed on this diagram isn't mounted in this model.



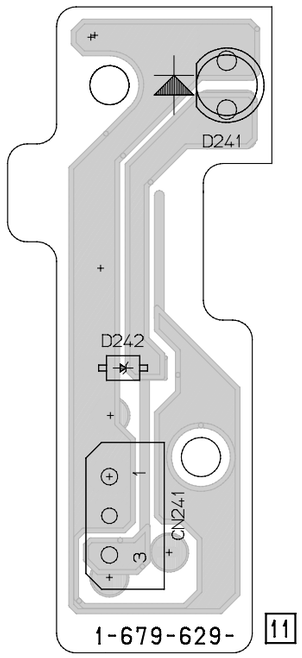
LT-37 (LED), LT-38 (LED), CS-57 (CK SENSOR) PRINTED WIRING BOARDS

— Ref. No. LT-37, LT-38, CS-57 Boards; 1,000 Series —

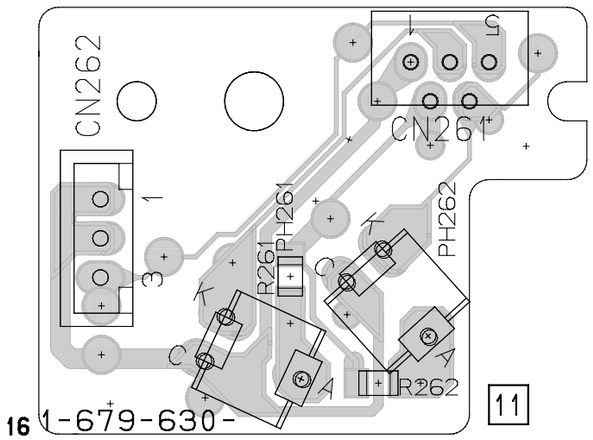
LT-37 BOARD(SIDE B)

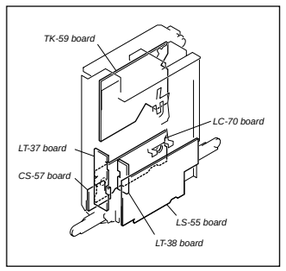


LT-38 BOARD
(SIDE B)



CS-57 BOARD
(SIDE B)



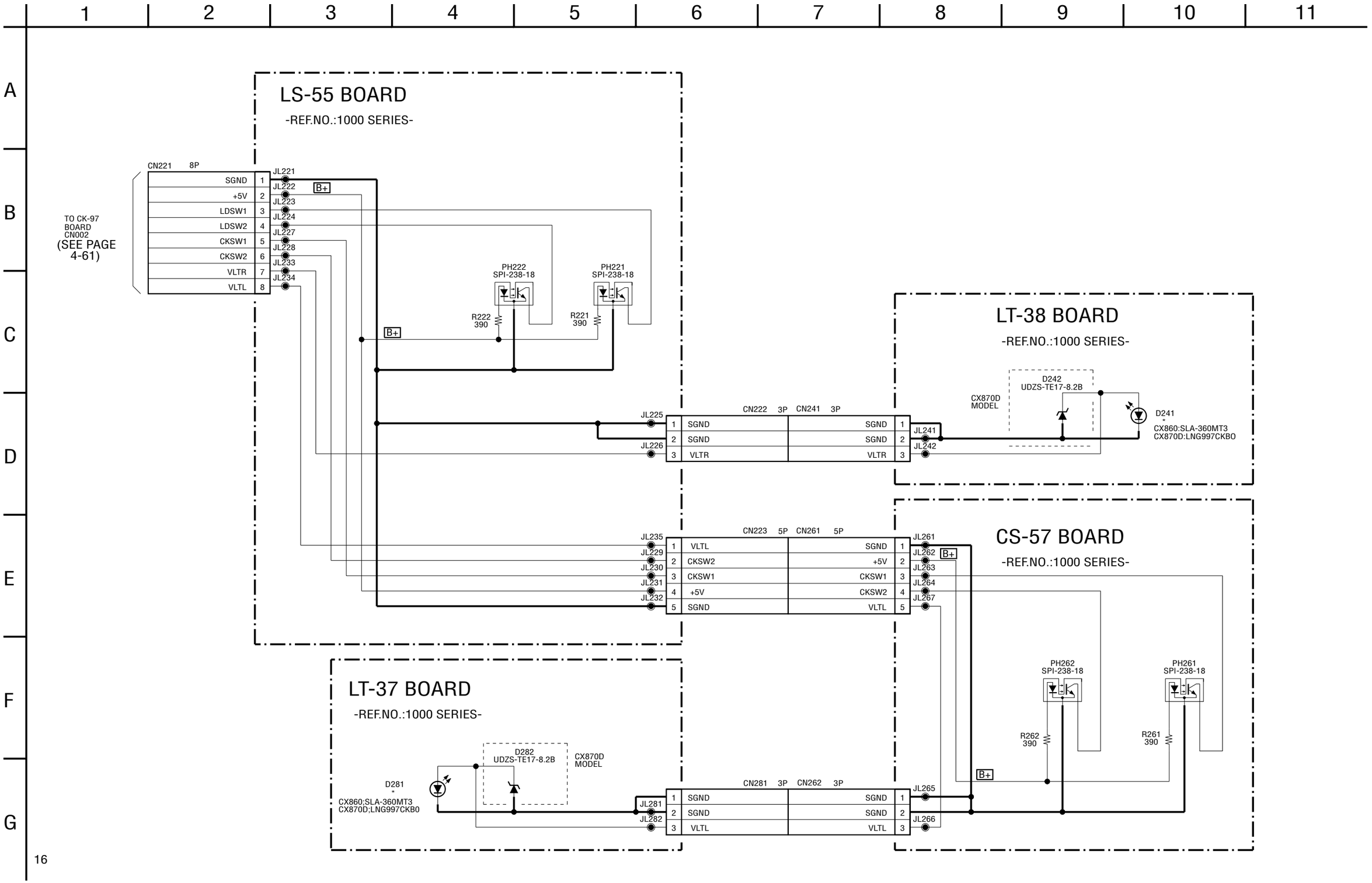


For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

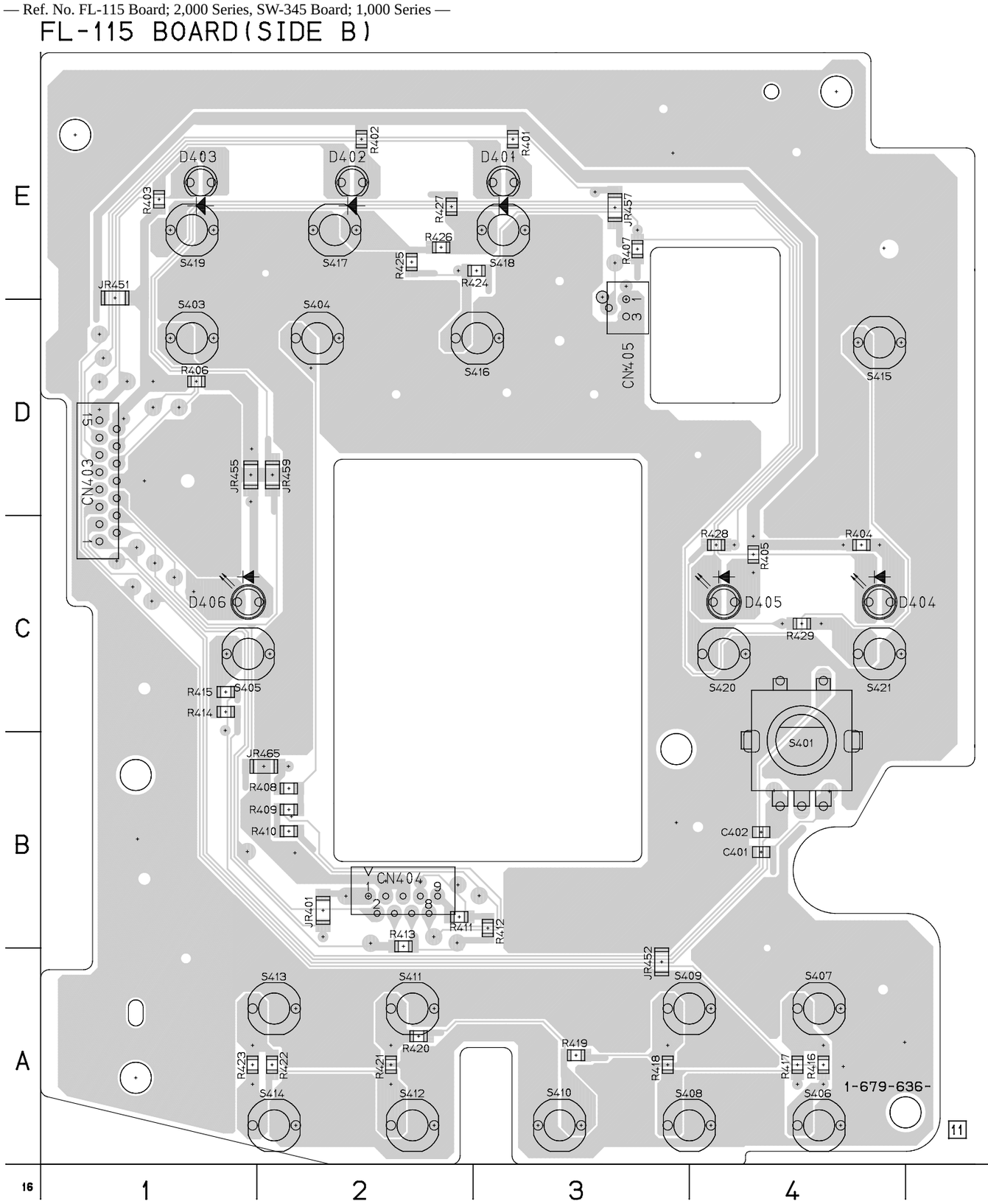
For Schematic Diagram

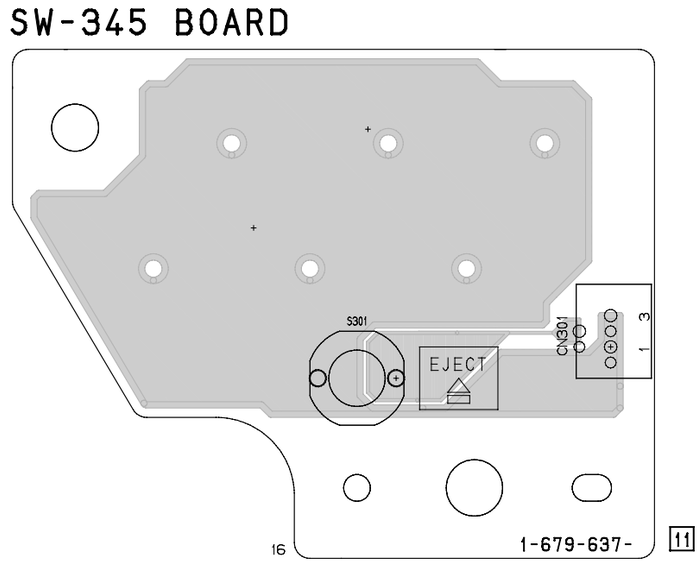
• Refer to page 4-69 for LS-55 printed wiring board.



FL-115 (DISPLAY CONTROL), SW-345 (EJECT SW) PRINTED WIRING BOARDS

— Ref. No. FL-115 Board; 2,000 Series, SW-345 Board; 1,000 Series —



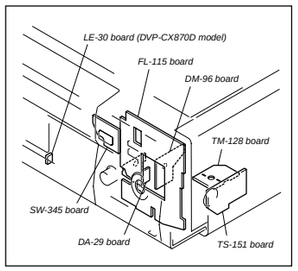


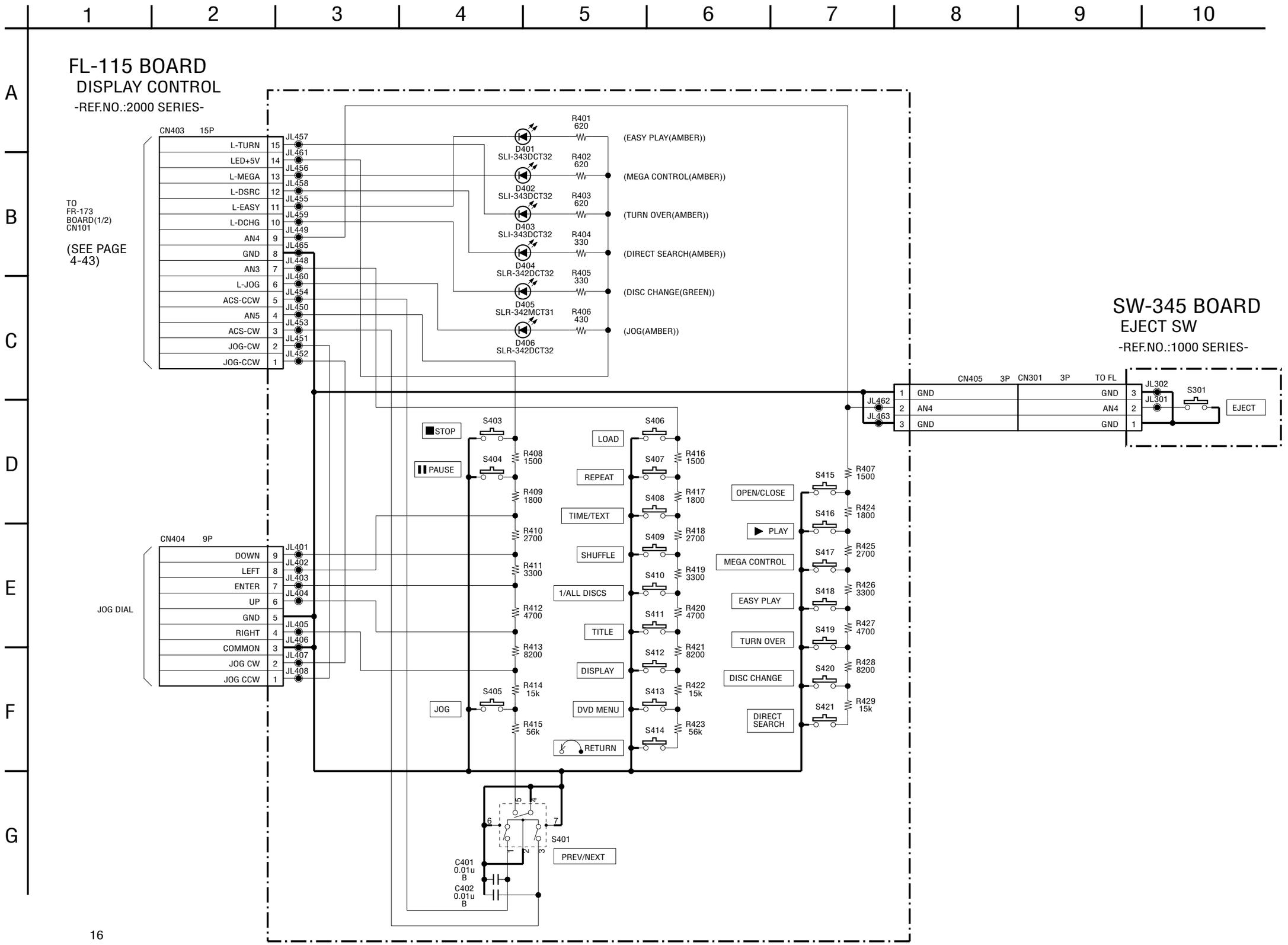
FL-115 BOARD (SIDE A)

D401	E-3
D402	E-3
D403	E-4
D404	C-1
D405	C-2
D406	C-4

For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.



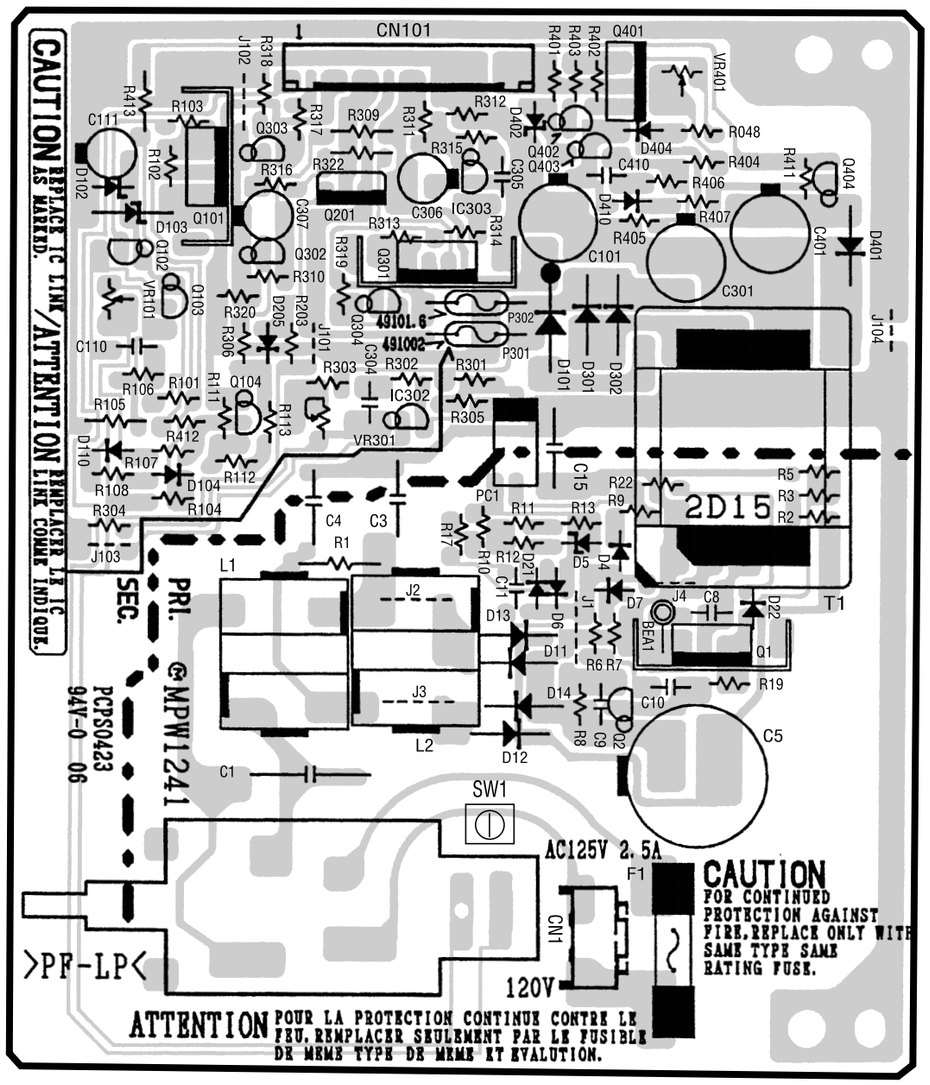

1 2 3 4 5 6 7 8 9 10
A B C D E F G
FL-115 BOARD
DISPLAY CONTROL
-REF.NO.:2000 SERIES-
TO FR-173 BOARD(1/2) CN101
(SEE PAGE 4-43)
CN403 15P
L-TURN 15 JL457
LED+5V 14 JL461
L-MEGA 13 JL456
L-DSRC 12 JL458
L-EASY 11 JL455
L-DCHG 10 JL459
AN4 9 JL449
GND 8 JL465
AN3 7 JL448
L-JOG 6 JL460
ACS-CCW 5 JL454
AN5 4 JL450
ACS-CW 3 JL453
JOG-CW 2 JL451
JOG-CCW 1 JL452
R401 620
D401 SLI-343DCT32
(EASY PLAY(AMBER))
R402 620
D402 SLI-343DCT32
(MEGA CONTROL(AMBER))
R403 620
D403 SLI-343DCT32
(TURN OVER(AMBER))
R404 330
D404 SLR-342DCT32
(DIRECT SEARCH(AMBER))
R405 330
D405 SLR-342MCT31
(DISC CHANGE(GREEN))
R406 430
D406 SLR-342DCT32
(JOG(AMBER))
SW-345 BOARD
EJECT SW
-REF.NO.:1000 SERIES-
CN405 3P CN301 3P TO FL
JL462 1 GND GND 3 JL302
JL463 2 AN4 AN4 2 JL301
3 GND GND 1
S301
EJECT
STOP S403
PAUSE S404
R408 1500
R409 1800
R410 2700
R411 3300
R412 4700
R413 8200
R414 15k
R415 56k
JOG S405
LOAD S406
REPEAT S407
TIME/TEXT S408
SHUFFLE S409
1/ALL DISCS S410
TITLE S411
DISPLAY S412
DVD MENU S413
RETURN S414
R416 1500
R417 1800
R418 2700
R419 3300
R420 4700
R421 8200
R422 15k
R423 56k
OPEN/CLOSE S415
PLAY S416
MEGA CONTROL S417
EASY PLAY S418
TURN OVER S419
DISC CHANGE S420
DIRECT SEARCH S421
R407 1500
R424 1800
R425 2700
R426 3300
R427 4700
R428 8200
R429 15k
CN404 9P
JOG DIAL
DOWN 9 JL401
LEFT 8 JL402
ENTER 7 JL403
UP 6 JL404
GND 5 JL405
RIGHT 4 JL406
COMMON 3 JL407
JOG CW 2 JL408
JOG CCW 1
S401
PREV/NEXT
C401 0.01u B
C402 0.01u B

16

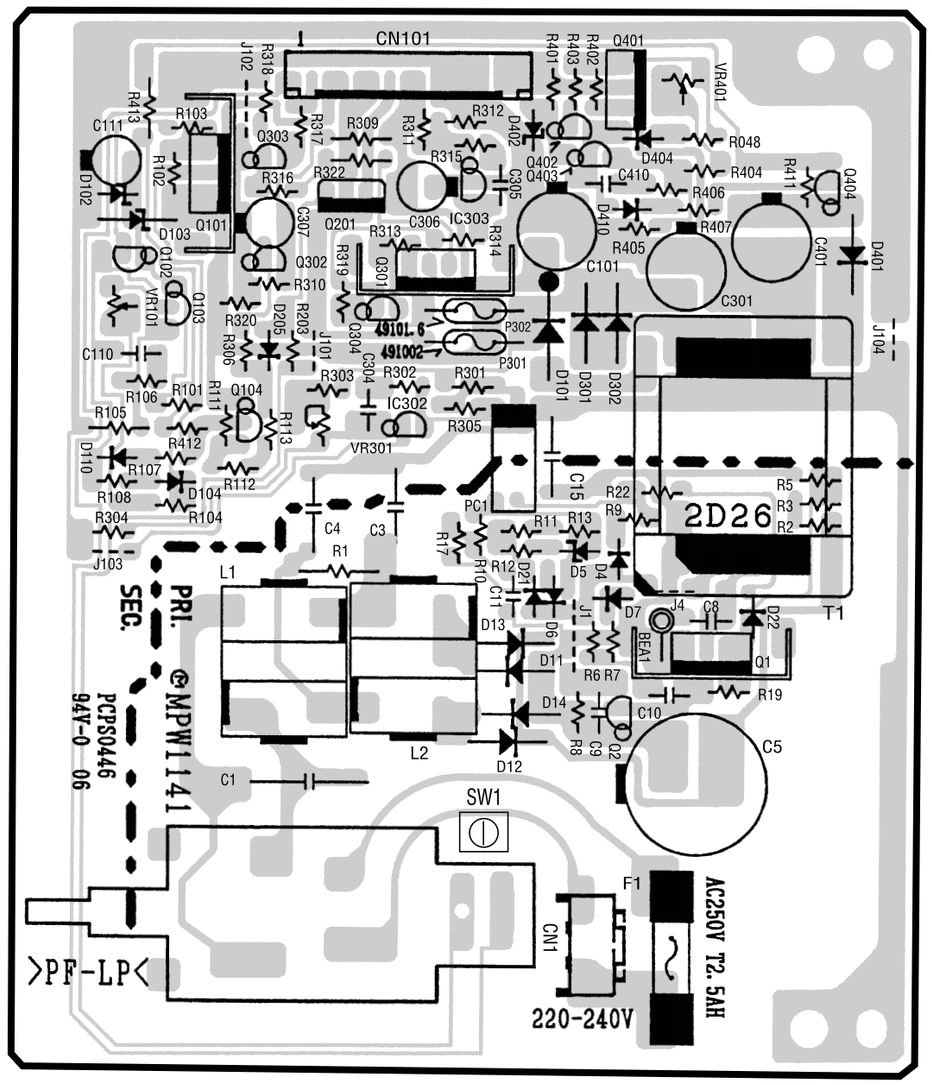
POWER BLOCK (MPW1241)(US, CND MODEL), POWER BLOCK (MPW1141)(AEP, UK MODEL) PRINTED WIRING BOARDS

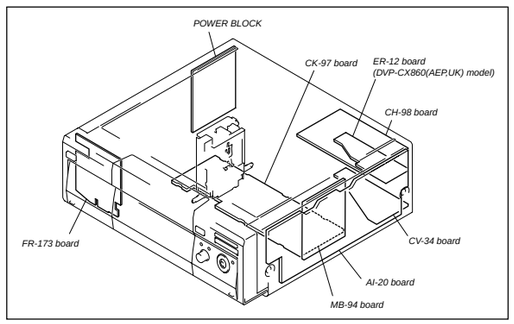
— Ref. No. Power Block (MPW1241)(MPW1141) Board; 6,000 Series —

POWER BLOCK (MPW1241) (US,CND MODEL)

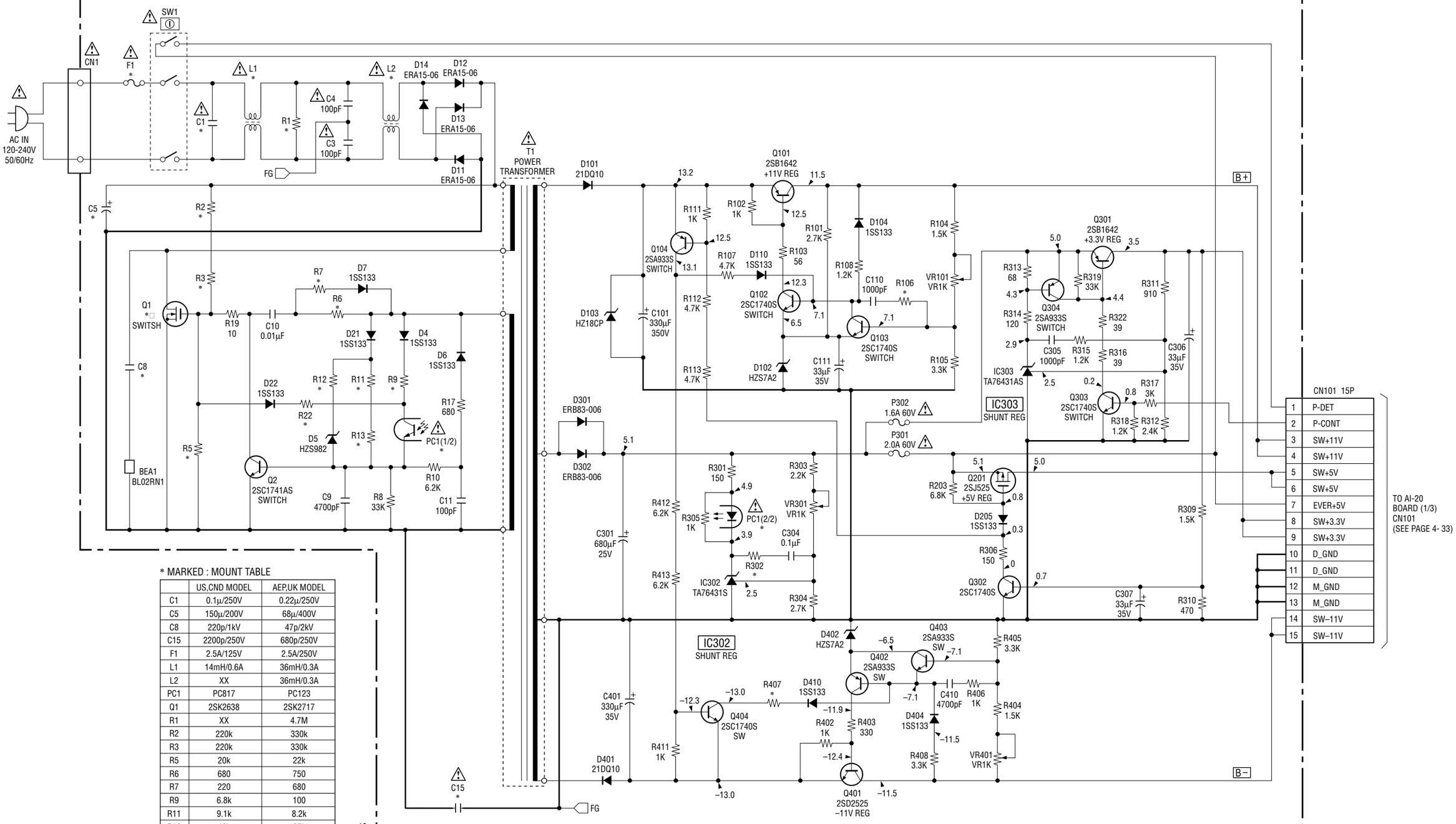


POWER BLOCK (MPW1141) (AEP,UK MODEL)





POWER BLOCK (MPW1241) (US,CND MODEL)
(MPW1141) (AEP,UK MODEL)
-REF NO 6000 SERIES-



* MARKED : MOUNT TABLE

	US,CND MODEL	AEP,UK MODEL
C1	0.1µ/250V	0.22µ/250V
C5	150µ/200V	68µ/400V
C8	220p/1kV	47p/2kV
C15	2200p/250V	680p/250V
F1	2.5A/125V	2.5A/250V
L1	14mH/0.6A	36mH/0.3A
L2	XX	36mH/0.3A
PC1	PC817	PC123
Q1	2SK2638	2SK2717
R1	XX	4.7M
R2	220k	330k
R3	220k	330k
R5	20k	22k
R6	680	750
R7	220	680
R9	6.8k	100
R11	9.1k	8.2k
R12	18k	27k
R13	1.5k	750
R22	470	6.2k
R106	2k	1k
R302	15k	7.5k
R407	4.7k	3k

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

*MARKED:MOUNT TABLE(AI-20BOARD(2/3))

REF.NO	CX860(US,CND)	CX860 (AEP,UK)	CX870D
C203		XX	22u 50V
C208		XX	0.22u 16V B
C209		XX	0.001u 50V B
C210		XX	22u 50V
C211		XX	0.22u 16V B
C212		220u 16V	1000u 10V
C213	XX	0.47u 16V B	
C214		0.01u 50V B	XX
C215		0.01u 50V B	XX
C218		0.01u 50V B	XX
C219	XX	0.01u 50V B	XX
C220		47u 16V	47u 25V
C221	XX	10u 50V	XX
C222		47u 16V	47u 63V
C223		XX	0.1u 63V
C226		47u 16V	47u 63V
C229		XX	0.1u 63V
C230		0.1u 25V B	XX
C231		XX	220u 63V
C232		1u 50V	4.7u 63V
C235		1u 50V	10u 63V
C236		XX	0.1u 63V
C237		100u 10V	47u 63V
C238		0.01u 50V B	XX
C239		0.01u 50V B	XX
C240		XX	3300p 50V B
C241		XX	3300p 50V B
C244		100u 10V	22u 63V
C245		XX	3300p 50V B
C246		XX	3300p 50V B
C249		XX	47u 63V
C250		XX	0.01u 50V B
C251		XX	0.01u 50V B
C252	XX	0.01u 50V B	
C253		XX	220p 50V
C254		XX	220p 50V
C255		XX	150p 50V CH
C256		XX	150p 50V CH
C257		XX	150p 50V
C258		XX	470p 50V CH
C259		XX	820p 50V
C260		XX	1500p 50V CH
C262	XX	0.47u 16V B	
C263		XX	820p 50V
C264		XX	1500p 50V CH
C265		XX	0.001u 50V
C266		XX	220p 50V
C267		XX	150p 50V CH
C268		XX	470p 50V CH
C270		XX	220p 50V
C271		XX	0.01u 50V B
C272		XX	150p 50V CH
C273		XX	0.01u 50V B
C274		XX	150p 50V
C275	XX	0.01u 50V B	

REF.NO	CX860(US,CND)	CX860 (AEP,UK)	CX870D
C276		XX	0.1u 63V
C277		XX	22u 50V
C278		XX	0.22u 25V B
C279		0.01u 50V B	XX
C280		0.01u 50V B	XX
C283		22u 50V	100u 50V
C285	XX	470p 50V CH	XX
C286	XX	470p 50V CH	XX
D201	XX	DAN202K-T-	
D202	XX	1SS355TE-1	XX
D203		XX	DAN202K-T-
IC202		XX	CXD9543Q
IC203		CXD9545Q	XX
IC205	XX	LC78817M-T	XX
IC208		XX	BA15532F-E
IC209		XX	BA4558F-E2
IC210	XX	BA4558F-E2	
Q201		XX	UN2213-TX
Q202	XX	DTC124TKA-	
Q203	XX	2SB709A-QR	
Q208	XX	UN2113-TX	
Q209	XX	DTC124TKA-	
Q210	XX	2SB709A-QR	
R208		XX	0
R221		XX	10
R223		XX	10K
R225		XX	0
R228		XX	10
R230		XX	100
R231		XX	1K
R232		XX	1K
R234		0	XX
R235		XX	10K
R246	XX	10K	
R249	XX	10K	
R255		XX	1200
R256		XX	1200
R257		XX	1200
R258		XX	1200
R259	XX	0	1200
R260	XX	0	1200
R261		XX	0
R262	XX	47K	
R263		XX	3900
R264		XX	3900
R265		XX	3900
R266		XX	3900
R267	XX	3300	1200
R268	XX	3300	1200
R269		XX	1K
R270		XX	1K
R271		XX	3300
R272		XX	3300
R273		XX	3300
R274		XX	3300
R276		XX	3900
R277		XX	12K
R278	XX	0	12K
R279		XX	3900
R280		XX	12K
R281	XX	12K	
R282		XX	1800
R283		XX	1800
R284	XX	0	
R285		XX	1800
R286		XX	1800
R287		XX	1800
R288		XX	1800
R289	XX	0	1800
R290	XX	0	
R291		XX	1800
R292		XX	3900
R293		XX	1800
R294		XX	12K
R295	XX	0	1800
R296	XX	0	12K
R298		XX	3900
R299		XX	12K
R300	XX	12K	
R306		XX	10K
R307		0	XX
R310	0	22	
R315	XX	4700	
R316	XX	10K	
R317	XX	47K	
R318	XX	10K	
R319	XX	470	

*MARKED:MOUNT TABLE(CH-98BOARD)

REF.NO	CX860(US,CND)	CX860 (AEP,UK)	CX870D
C402		560p 50V CH	XX
C403		560p 50V CH	XX
C404		10u 50V	XX
C405		XX	47u 63V
C406		XX	150p 50V
C407		XX	150p 50V
C408		XX	0.1u 63V
C409		470u 6.3V	47u 63V
C410		150p 50V CH	XX
C411		150p 50V CH	XX
C412		XX	560p 50V
C414		XX	560p 50V
C415		XX	150p 50V
C416		150p 50V CH	XX
C417		XX	150p 50V
C418		XX	330u 10V
C419		10u 50V	47u 63V
C420		150p 50V CH	XX
C422		XX	1200p 50V
C423		XX	1200p 50V
C425		XX	470p 50V
C426		XX	470p 50V
C428		XX	0.1u 63V
C429		XX	47u 50V
C430		47u 16V	XX
C431		47u 16V	XX
C432		XX	47u 50V
C433		XX	0.1u 63V
C438		XX	47u 16V
C439		XX	0.1u 63V
C440		XX	47u 16V
C441		XX	0.1u 63V
C442		XX	22u 50V
C443		XX	22u 50V
C444		22u 50V	47u 16V
C445		XX	22u 50V
C446		XX	0.1u 63V
C447		XX	0.1u 63V
C448		XX	0.001u 50V
C449		XX	0.001u 50V
C450		XX	220p 50V CH
C451		3300p 50V	2200p 50V
C452		XX	220p 50V
C453		3300p 50V	2200p 50V
C454		XX	3300p 50V B
C455		XX	3300p 50V B
C456		XX	0.001u 50V
C457		XX	0.001u 50V
C458	100p 50V CH	XX	100p 50V CH
C464	100p 50V CH	XX	100p 50V CH
C472	XX	220p 50V CH	XX

REF.NO	CX860(US,CND)	CX860 (AEP,UK)	CX870D
D402		XX	1SS355TE-1 871998861
FB403	○	XX	○
FB404	○	XX	○
FB407		XX	○
FB408	XX	○	○
FB409		XX	○
FB410		XX	○
FB411		XX	○
FB412		XX	○
IC401		BA4558F-E2	BA15532F-E
IC403		XX	OPA2134UA
JS401	XX	○	XX
JS402	XX	○	XX
Q401		XX	2SC2712-YG
Q403		XX	2SA1162-YG
Q405		XX	2SD601A-QR
Q408		XX	2SD1938(F)
Q409	XX	2SD1938(F)	
Q410		XX	2SD1938(F)
Q411		XX	2SD1938(F)
Q412		XX	2SD1938(F)
Q413		XX	2SD1938(F)
Q414		XX	2SD1938(F)
Q415		XX	2SD1938(F)
R408		1K	XX
R410		XX	22K
R411		XX	10K
R412		XX	1K
R422		XX	68
R423		XX	1800
R424		XX	1800
R425		220	XX
R426		XX	1800
R427		XX	1800
R433		XX	1K
R439		XX	47K
R443		XX	3300
R445	4700	XX	
R446	XX	4700	
R447	XX	3300	
R449	XX	100K	
R450		XX	3300
R451		XX	100K
R452		XX	3300
R453		XX	3300
R454	XX	100K	
R455		XX	3300
R456		XX	470
R457	XX	470	
R458		XX	470
R460		XX	470
R461		XX	470
R463	470	XX	470
R465	470	XX	470
R467		XX	470
R469	XX	0	XX
R470		XX	47K
R471		XX	47K
R472		XX	47K
R473		XX	47K
R474	XX	47K	
R475		XX	47K
R489		XX	470
R490		XX	470
RY402		XX	○

*** MARKED: MOUNT TABLE**
AI-20 (2/3), CH-98

5-1. SYSTEM CONTROL PIN FUNCTION MB91108PFV-G-BND (MB-94 BOARD IC102)

Pin No.	Pin name	I/O	Function
1–5	HA17-HA21	O	Address bus A17-A21
6	HA22	–	Not used
7	RGBSEL	O	Color difference signal/RGB signal select signal output
8	DACMUTE/FS	O	Filter control signal output
9	AVCC	–	Power supply
10	AVRH	–	Reference power supply (+3.3 V)
11	AVSS	–	Ground
12	AN0	I	Set of mode 0
13	AN1	I	Set of mode 1
14	AN2	I	Set of mode 2
15	AN3	I	Set of mode 3
16	XRST	O	System reset signal output
17	POFF	–	Not used
18	CSb	O	Chip select signal for servo DSP
19	NC	–	Not used
20	EUROV/Y/VFC1	O	EURO V/Y select signal output
21	DISCEXT/VFC2	O	Line input select signal output (DISC: “H”, EXT: “ L”)
22	ARPRST	O	Reset signal output for ARP
23	DRVMUTE	O	Drive mute signal output
24	VCC	–	Power supply
25	INT0	I	Input of interrupt from AV DEC
26	INT1	I	Input of interrupt from ARP
27	INT2	I	Input of interrupt from FGA
28	INT3	I	Input of interrupt from EEPROM
29	INT4	I	Input of interrupt from IF CON
30	INT5	I	Input of interrupt from audio DSP
31	INT6	I	Input of interrupt from audio DSP
32	INT7	I	Input of interrupt from servo DSP
33	SI0	I	Serial data input from IF CON and EEPROM
34	VSS	–	Ground
35	SO0	O	Serial data output to IF CON and EEPROM
36	SC0	O	Serial clock output to IF CON and EEPROM
37	SI1	I	Serial bus 1 (for data input)
38	SO1	O	Serial bus 1 (for data output)

Pin No.	Pin name	I/O	Function
39	SC1	O	Serial clock output
40	SI2	I	Serial bus 2 (for data input)
41	SO2	O	Serial bus 2 (for data output)
42	YUVRGB/GAIN/CKSW2	O	Mute signal output to video buffer and EURO C/R select signal output
43	DREQ0	I	Input of DMA-REQ 0 from AV DEC
44	DACK0	O	Output of DMA-ACK 0 to AV DEC
45	IFCS	O	Chip select signal to IF CON
46	DREQ1	I	Input of DMA-REQ 1 from AV DEC
47	DACK1	O	Output of DMA-ACK 1 to AV DEC
48	EWC	O	Write control signal output to EEPROM
49	ECS	O	Chip select signal output to EEPROM
50	KCS/39CS	O	Chip select signal output to audio DSP
51	AURST	O	Reset signal output to audio DAC
52	VSS	–	Ground
53	X1	O	Clock output (12.5 MHz)
54	X0	I	Clock input (12.5 MHz)
55	VCC	–	Power supply
56	CKSW1	I	Chuck sensor input
57	OCSW1	I	Tray sensor input
58	OCSW2	I	Tray sensor input
59	DACCS0	O	Chip select signal output to DAC (2ch)
60	DACCS1	O	Chip select signal output to DAC (6ch) and DSP
61	48/44.1K	O	PLL FS control signal output
62	MAMUTE	O	Audio mute signal output
63	WIDE	O	WIDE select signal output
64	C	–	Capacitor (0.1uF) connect between ground
65	CS0X	O	External ROM chip select signal output
66	CS1X	–	Not used
67	CS2X	O	Chip select signal output (for AV DEC)
68	CS3X	O	Chip select signal output (for AV DEC)
69	CS4X	O	Chip select signal output (for ARP)
70	CS5X	O	Chip select signal output (for FGA)

Pin No.	Pin name	I/O	Function
71	CPUCK	O	CPU clock signal output
72	NMIX	–	Not used (fixed at “H”)
73	HSTX	–	Not used (fixed at “H”)
74	FRRSTIN	I	Reset signal input from IF CON
75	VSS	–	Ground
76	MD0	I	Input of mode select 0 (fixed at “1”)
77	MD1	–	Ground
78	MD2	–	Ground
79	XWAIT	I	Wait signal input
80	BGRNTX	–	Test terminal (fixed at “H”)
81	BRQ	–	Test terminal (fixed at “L”)
82	RD	O	Read enable signal output
83	WRH	O	High byte write enable signal output (16 bit and 8 bit)
84	NC	–	Not used
85–92	HD0-HD7	I/O	Data bus D0-D7 (16 bit only)
93–100	HD8-HD15	I/O	Data bus D8-D15 (16 bit) , D0-D7 (8 bit)
101	VSS	–	Ground
102–109	HA0-HA7	O	Address bus A00-A07
110	VCC	–	Power supply
111–118	HA8-HA15	O	Address bus A08-A15
119	VSS	–	Ground
120	HA16	O	Address bus A16

SECTION 6
TEST MODE

6-1. GENERAL DESCRIPTION

The Test Mode allows you to make diagnosis and adjustment easily using the remote commander and monitor TV. The instructions, diagnostic results, etc. are given on the on-screen display (OSD).

6-2. STARTING TEST MODE

At the bottom of menu screen, the model name and revision number are displayed. The “T table” that appers on the screen means the turn table.
To execute each function, select the desired menu and press its number on the remote commander.
To exit from the Test Mode, press the POWER button.

```
         Test Mode Menu

0. Syscon Diagnosis
1. Drive Auto Adjustment
2. Drive Manual Operation
3. Mecha Aging
4. Emergency History
5. Version Information
6. Video Level Adjustment
                Exit: Power Key
_
Model    : DPX13xxxx
Revision   : x.xxx
```

6-3. SYSCON DIAGNOSIS

The same contents as board detail check by serial interface can be checked from the remote commander.
On the Test Mode Menu screen, press [0] key on the remote commander, and the following check menu will be displayed.

```
    ### Syscon Diagnosis ###
           Check Menu
0. Quit
1. All
2. Version
3. Peripheral
4. Servo
5. Supply
6. AV Decoder
7. Video
8. Audio
_
```

0. Quit
Quit the Syscon Diagnosis and return to the Test Mode Menu.

1. All
All items continuous check
This menu checks all diagnostic items continuously. Normally, all items are checked successively one after another automatically unless an error is found, but at a certain item that requires judgment through a visual check to the result, the following screen is displayed for the key entry.

```
    ### Syscon Diagnosis ###

         Diag All Check
          No. 2 Version

 2-3. ROM Check Sum
Check Sum = xxxx



Press NEXT Key to Continue
Press PREV Key to Repeat
_
```

For the ROM Check, the check sum calculated by the Syscon is output, and therefore you must compare it with the specified value for confirmation.
Following the message, press [NEXT] key to go to the next item, or [PREV] key to repeat the same check again. To quit the diagnosis and return to the Check Menu screen, press [STOP] or [ENTER] key. If an error occurred, the diagnosis is suspended and the error code is displayed as shown below.

```
    ### Syscon Diagnosis ###




 3-2. EEPROM Check
Error 03: EEPROM Write/Reed N
Address    : 00000001
Write Data : 2492
Read Data  : 2490
Press NEXT Key to Continue
Press PREV Key to Repeat
_
```

Press [STOP] key to quit the diagnosis, or [PREV] key to repeat the same item where an error occurred, or [NEXT] key to continue the check from the item next to faulty item.

Subnemu

Selecting 2 and subsequent items calls the submenu screen of each item.
For example, if “5. Supply” is selected, the following submenu will be displayed.

```
    ### Syscon Diagnosis ###
           Check Menu
          No. 5 Supply
0. Quit
1. All
2. ARP Register Check
3. ARP to RAM Data Bus
4. ARP to RAM Address Bus
5. ARP RAM Check
_
```

0. Quit
Quit the submenu and return to the main menu.

1. All

All submenu items continuous check
This menu checks 2 and subsequent items successively. At the item where visual check is required for judgment or an error occurred, the checking is suspended and the message is output for key entry. Normally, all items are checked successively one after another automatically unless an error is found.
Selecting 2 and subsequent items executes respective menus and outputs the results.
For the contents of each submenu, see “Check Items List”.

General Description of Checking Method

2. Version

(2-2) Revision
ROM revision number is displayed.
Error: Not detected.
The revision number defined in the source file of ROM (IC106) is displayed with four digits.

(2-3) ROM Check Sum
Check sum is calculated.
Error: Not detected.
The data are added of ROM (IC106) and the result is displayed with 4-digit hexadecimal number. Error is not detected. Compare the result with the specified value.

(2-4) Model Type
Model code is displayed.
Error: Not detected.
The model code is displayed with 2-digit hexadecimal number.

	Model Type	
DVP-CX860 (US, CND)	6	0
DVP-CX860 (AEP, UK)	6	3
DVP-CX870D (US, CND)	7	0

(2-5) Region
Region code is displayed.
Error: Not detected.
The region code determined from the model code is displayed.

3. Peripheral

(3-2) EEPROM Check
Data write → read, and accord check
Error 03: EEPROM write/read discord
Before writing, the data are saved, then after checking, they are written to restore the contents of EEPROM.

(3-3) Gate Array Check
Data write → read, and accord check
Error 02: Gate array write/read discord

4. Servo

(4-2) Servo DSP Check
Data write → read, and accord check
Error 12: Read data discord

(4-3) DSP Driver Test
Test signal data → DSP Driver
Error: Not detected.

5. Supply

Caution: Do not conduct this check with a mechanical deck connected.
An access is made to the stream supply and servo control IC (IC302) and external RAM (IC303) using check data. If mechanical deck is connected, the motor and optics could be damaged. This check is also executed by the “All” menu item.

Supplement: How to disconnect mechanical deck
Disconnect flexible flat cables connected to the CN201 and CN202 of MB-86 board. Also, disconnect flat cable from the CN401.

(5-2) ARP Register Check
Data write → read, and accord check
Error 08: ARP register write, and read data discord

(5-3) ARP to RAM Data Bus
Data write → read, and accord check
Error 09: ARP ←→ RAM data bus error
Data 0x0001 to 0x8000 where one bit each is set to 1 are written to the address 0 of RAM (IC303) connected to the ARP (IC302) through the bus, then they are read and checked. In case of discord, written bit pattern and read data are displayed. If data where multiple bits are 1 are read, the bits concerned may touch each other. Further, if data where certain bit is always 1 or 0 regardless of written data, the line could be disconnected or shorted.

(5-4) ARP to RAM Address Bus
Data write → other address read discord check
Error 10: ARP → RAM address bus error
Caution: Address and data display in case of an error is different from the display of other diagnosis (described later).
Before starting the test, all addresses of RAM (IC303) are cleared to 0x0000.
First, 0xA55A is written to the address 0x00000, and the address data are read and checked from addresses 0x00001 to 0x80000 while shifting 1 bit each. Next, the data at that address is cleared, and it is written to the address 0x00001, and read and checked in the same manner. This check is repeated up to the address 0x80000 while shifting the address data by 1 bit each.
If data other than 0 is read at the addresses except written address, an error is given because all addresses were already cleared to 0. In this check, the error display pattern is different from that of other diagnosis; read data, written address, and read address are displayed in this order. However, the message uses same template, and accordingly exchange Address and Data when reading. The following display, for example,

```
    ### Syscon Diagnosis ###



 5-4. ARP to RAM Address Bus
Error 10: ARP - RAM Address B
Address    : 0000A55A
Write Data : 00000000
Read Data  : 00080000
Press NEXT Key to Continue
Press PREV Key to Repeat
_
```

shows the data 0xA55A was read from address 0x00080000 though it was written to the address 0x00000000. This implies that these addresses are in the form of shadow. Also, if the read data is not 0xA55A, another error will be present.

(5-5) ARP RAM Check
Data write → read, and accord check
Error 11: ARP RAM read data discord
The program code data stored in ROM are copied to all areas of RAM (IC303) connected to the ARP (IC302) through the bus, then they are read and checked if they accord. If the detail check was selected initially, the data are written to all areas and read, then the same test is conducted once again with the data where all bits are inverted between 1 and 0. If discord is detected, faulty address, written data, and read data are displayed following the error code 11, and the test is suspended.

6. AV Decoder

(6-2) 1930 RAM
Data write → read, and accord check
Error 13: AVD RAM read data discord
The program code data stored in ROM (IC106) are copied to all areas of RAM (IC504, IC505) connected to the AVD (IC502) through the bus, then they are read and checked if they accord. Further, the same test is conducted once again with the data where all bits are inverted between 1 and 0. If discord is detected, faulty address, written data, and read data are displayed following the error code 13, and the test is suspended.

(6-3) 1930 SP
ROM → AVD RAM → Video OUT
Error: Not detected.
The data including sub picture streams in ROM (IC106) are transferred to the RAM (IC504, IC505) in AVD (IC502), and output as video signals from the AVD (IC502).
They are output from all video terminals (Composite, Y/C, Component).

7. Video

(7-2) Color Bar
AVD color bar command write → Video OUT
Error: Not detected.
The command is transferred to the AVD, and the color bar signals are output from video terminals.
They are output from all video terminals (Composite, Y/C, Component).

8. Audio

(8-2) ARP → 1930
Error 14 : ARP → 1930 video NG
15 : ARP → 1930 audio NG

(8-3) Test Tone
A pink noise signal is output from the AVD (IC502) through optical coaxial digital terminal and analog audio terminal.
Error: Not detected.
All channels → 2ch Left → 2ch Right are checked in this order.

Check Items List

2) Version
(2-2) Revision
(2-3) ROM Check Sum
(2-4) Model Type
(2-5) Region

3) Peripheral
(3-2) EEPROM Check
(3-3) Gate Array Check

4) Servo
(4-2) Servo DSP Check
(4-3) DSP Driver Test

5) Supply
(5-2) ARP Register Check
(5-3) ARP to RAM Data Bus
(5-4) ARP to RAM Address Bus
(5-5) ARP RAM Check

6) AV Decoder
(6-2) 1930 RAM
(6-3) 1930 SP

7) Video
(7-2) Color Bar

8) Audio
(8-2) ARP → 1930
(8-3) Test Tone

Error Codes List

00: Error not detected
01: RAM write/read data discord
02: Gate array NG
03: EEPROM NG
08: ARP register read data discord
09: ARP ←→ RAM data bus error
10: ARP ←→ RAM address bus error
11: ARP RAM read data discord
12: Servo DSP NG
13: 1930 SDRAM NG
14: ARP → 1930 video NG
15: ARP → 1930 audio NG
16: 1939 UCODE download NG
17: System call error (function not supported)
18: System call error (parameter error)
19: System call error (illegal ID number)
20: System call error (time out)
90: Error occurred
91: User verification NG
92: Diagnosis cancelled

6-4. DRIVE AUTO ADJUSTMENT

On the Test Mode Menu screen, press [1] key on the remote commander, and the drive auto adjustment menu will be displayed.

```
   ## Drive Auto Adjustment ##

         Adjustment Menu

0. ALL
1. DVD-SL
2. CD
3. DVD-DL
4. SACD



                    Exit: RETURN
```

Normally, [0] is selected to adjust DVD (single layer), CD, DVD (dual layer), and SACD in this order. But, individual items can be adjusted for the case where adjustment is suspended due to an error. In this mode, the adjustment can be made easily through the operation following the message displayed on the screen.
The disc used for adjustment must be the one specified for adjustment. However, for SACD disc, use the player with initial data if the disc is not available.

0. ALL

When [0.ALL] is selected, set the three discs at the same time. With the signal read out side of disc facing to the left, set the discs into 1. DVD-DL, 2. CD, 3. DVD-DL starting from number 1 of the T.table in this order. Press [ENTER] . Then, 1. DVD-SL disc, 2. CD disc and 3. DVD-DL disc are adjusted in this order. Discs need not be replaced. If an error is detected, re-start the adjustment from the very beginning. When you want to adjust these discs one disc after another, set the T table number to 1. Each time one disc was adjusted, it is ejected. Replace it with the specified disc following the message. Though the message to confirm whether discs other than SACD disc are adjusted is not displayed, you can finish the adjustment if pressing the [STOP] button. The S curve level, RF level, and jitter value can be confirmed during adjustment, and if OK, press the [ENTER] key and continue adjustment. (If NG, press the [STOP] button) During adjustment of each disc, the measurement for disc type judgment is made. As automatic adjustment does not judge the disc type unlike conventional models, take care not to insert wrong type discs. Also, do not give a shock during adjustment.

1. DVD-SL (single layer)

Select [1], insert DVD single layer disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

DVD Single Layer Disc Adjustment Steps

1. SLED TILT Reset
2. Disc Check Memory SL
3. Wait 500 msec
4. Set Disc Type SL
5. LD ON
6. Spdl Start
7. Wait 1 sec
8. Focus Search ON
9. Focus Search OFF
10. Focus Servo ON 1
11. Auto Track Offset Adjust
12. Tracking ON
13. CLVA ON
14. Wait 1 sec
15. Sled ON
16. Check CLV Lock
17. Auto LFO Adjust
18. Auto Focus Offset Adjust
19. Auto Tilt Position Adjust
20. Auto Focus Gain Adjust
21. Auto Focus Offset Adjust
22. EQ Boost Adjust
23. Auto LFO Adjust
24. Auto Track Gain Adjust
25. All Servo Stop
26. Eep Copy Loop Filter Offset

2. CD

Select [2], insert CD disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

CD Adjustment Steps

1. Sled Tilt Rest
2. Disc Check Memory CD
3. Wait 500 msec
4. Set Disc Type CD
5. LD ON
6. Spdl Start
7. Wait 1 sec
8. Focus Search ON
9. Focus Search OFF
10. Focus Servo ON 1
11. Auto Track Offset Adjust
12. Tracking ON
13. (TC Display Start)
14. CLVA ON
15. Wait 1 sec
16. Jitter Display Start
17. Sled ON
18. Check CLV ON
19. Auto LFO Adjust
20. Auto Focus Offset Adjust
21. Auto Focus Gain Adjust
22. Auto Focus Offset Adjust
23. Eq Boost Adjust
24. Auto LFO Adjust
25. Auto Track Gain Adjust
26. All Servo Stop

3. DVD-DL (dual layer)

Select [3], insert DVD dual layer disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

DVD Dual Layer Disc Adjustment Steps

1. Sled Tilt Reset
2. Disc Check Memory DL
3. Wait 500 msec
4. Set Disc Type DL
5. LD ON
6. Spdl Start
7. Wait 1 sec
   Layer 1 Adjust
8. Focus Servo ON 1
9. Auto Track Offset Adjust
10. Tracking ON
11. Clva ON
12. Wait 1 sec
13. Sled ON
14. Check CLV Lock
15. Auto Loop Filter Offset Adjust
16. Auto Focus Offset Adjust
17. Auto Focus Gain Adjust
18. Auto Focus Offset Adjust
19. Eq Boost Adjust
20. Auto Loop Filter Offset
21. Auto Track Gain Adjust
    Layer 0 Adjust
22. Fj (L1 → L0)
23. Auto Track Offset Adjust L0
24. Tracking ON
25. Clva ON
26. Wait 1 sec
27. Sled ON
28. Check CLV Lock
29. Auto Loop Filter Offset Adjust
30. Auto Focus Offset Adjust
31. Auto Focus Gain Adjust
32. Auto Focus Offset Adjust
33. Eq Boost Adjust
34. Auto Loop Filter Offset
35. Auto Track Gain Adjust
36. All Servo Stop

4. SACD

Select [4], insert SACD disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM. However, if SACD disc is not available, use the player with initial data, skipping the SACD adjustment. In this case, you can finish the adjustment if pressing the [STOP] button.

SACD Adjustment Steps

1. Sled Tilt Reset
2. Set Disc Type CD
3. LD ON
4. Spdl Start
5. Wait 1 sec
6. Focus Servo ON 0
7. Auto track Offset Adjust
8. Tracking ON
9. CLVA ON
10. Wait 1 sec
11. Sled ON
12. Check CLV ON
13. Auto LFO Adjust
14. Auto Focus Offset Adjust
15. Auto Focus Gain Adjust
16. Auto Focus Offset Adjust
17. Eq Boost Adjust
18. Auto LFO Adjust
19. Auto Track Gain Adjust
20. All Servo Stop

6-5. DRIVE MANUAL OPERATION

On the Test Mode Menu screen, select [2], and the manual operation menu will be displayed. When the menu item [2] is selected, the machine starts the mechanical initialization automatically. For the manual operation, each servo on/off control and adjustment can be executed manually. The unique adjustment of the model 300 CHG is the adjustment item “7 & 8. 300 CHG MechaCon Menu 1 and 2”.

```
  ## Drive Manual Operation ##

         Operation Menu
1. Disc type
2. Servo Control
3. Track/Layer Jump
4. Manual Adjustment
5. Auto Adjustment
6. Memory Check
7. 300CHG MechaCon Menu 1
8. 300CHG MechaCon Menu 2
0. Disc Check Memory
                Exit: Return
```

In using the manual operation menu, take care of the following points. These commands do not provide protection, thus requiring correct operation. The sector address or time code field is displayed when a disc is loaded.

1. Set correctly the disc type to be used on the Disc Type screen.
   The disc type must be set after a disc was loaded.
   The set disc type is cleared when the tray is opened.
2. After power ON, if the Drive Manual Operation was selected, first perform “Reset SLED TILT” by opening 1. Disc Type screen.
3. In case of an alarm, immediately press the [STOP] button to stop the servo operation, and turn the power OFF.

Basic operation (controllable from front panel or remote commander)

[POWER]	Power OFF
[STOP]	Servo stop
[OPEN/CLOSE]	Stop+Eject/Loading
[RETURN]	Return to Operation Menu or Test Mode Menu
[NEXT], [PREV]	Transition between sub modes of menu
[1] to [9], [0]	Selection of menu items
Cursor UP/DOWN	Increase/Decrease in manually adjusted value

0. Disc Check Memory

```
          Disc Check



1. SL Disc Check
2. CD Disc Check
3. DL Disc Check



0. Reset SLED TILT
```

On this screen, the mirror time is measured to judge the disc and it is written to the EEPROM. First load DVD SL disc and press [1], next load CD disc and press [2], and finally load DVD DL disc and press [3].
The adjustment must be executed more than once after default data were written. External vibration or shock to the player must not be given. Reference value for DVD is from 10 to 20, and for CD, from 28 to 4F.
Check that the value of CD is larger than that of DVD.
When those values are beyond a range perform this adjustment again.
From this screen, you can go to another mode by pressing [NEXT] or [PREV] key, but you cannot enter this mode from another mode. You can enter this mode from the Operation Menu screen only.

1. Disc Type

```
          Disc Type
1. Disc Type Auto Check
2. DVD SL   12 cm
3. DVD DL   12 cm
4. CD       12cm
5. SACD     12 cm
6. DVD SL   8 cm
7. DVD DL   8 cm
8. CD       8 cm
9. SACD     8 cm
0. Reset SLED TILT
                        EMG. 00
```

On this screen, select the disc type. To select the disc type, press the number of the loaded disc. The selected disc type is displayed at the bottom. Selecting [1] automatically selects and displays the disc type. In case of wrong display, retry “Disc Check Memory”. Also, opening the tray causes the set disc type to be cleared. In this case, set the disc type again after loading.
In performing manual operation, the disc type must be set.
Once the disc type has been selected, the sector address or time code display field will appear as shown below. These values are displayed when PLL is locked.

```
          Disc Type
1. Disc Type Auto Check
2. DVD SL   12 cm
3. DVD DL   12 cm
4. CD       12cm
5. SACD     12 cm
6. DVD SL   8 cm
7. DVD DL   8 cm
8. CD       8 cm
9. SACD     8 cm
0. Reset SLED TILT
       SA._____ SI.___ EMG. 00
DVD SL 12 cm
```

Display when DVD SL 12cm disc was selected

```
          Disc Type
1. Disc Type Auto Check
2. DVD SL   12 cm
3. DVD DL   12 cm
4. CD       12cm
5. SACD     12 cm
6. DVD SL   8 cm
7. DVD DL   8 cm
8. CD       8 cm
9. SACD     8 cm
0. Reset SLED TILT
       TC.___:___:___ EMG. 00
CD   12 cm
```

Display when CD 12cm disc was selected

[0] Reset SLED TILT — Reset the Sled and Tilt to initial position.

[1] Disk Type Check — Judge automatically the loaded disc. As the judged result is displayed at the bottom of screen, make sure that it is correct.
If Disc Check Memory menu has not been executed after EEPROM default setting, the disc type cannot be judged. In this case, return to the initial menu and make a check for three types of discs (SL, DL, CD).

[2] to [9] — Select the loaded disc. The adjusted value is written to the address of selected disc. No further entry is necessary if [1] was selected.

2. Servo Control

```
          Servo Control
1. LD         Off R.Sled FWD
2. SP         Off L.Sled REV
3. Focus      Off U.Tilt Up
4. TRK.       Off D.Tilt Down
5. Sled       Off
6. CLVA       Off
7. FCS. Srch Off



0. Reset SLED TILT
       SA._____ SI.___ EMG. 00
DVD SL 12 cm
```

On this screen, the servo on/off control necessary for replay is executed. Normally, turn on each servo from 1 sequentially and when CLVA is turned on, the usual trace mode becomes active. In the trace mode, DVD sector address or CD time code is displayed. This is not displayed where the spindle is not locked.
The spindle could run overriding the control if the spindle system is faulty or RF is not present. In such a case, do not operate CLVA.

0	Reset SLED TILT	Reset the Sled and Tilt to initial position.
1	LD	Turn ON/OFF the laser.
2	SP	Turn ON/OFF the spindle.
3	Focus	Search the focus and turn on the focus.
4	TRK	Turn ON/OFF the tracking servo.
5	Sled	Turn ON/OFF the sled servo.
6	CLVA	Turn ON/OFF normal servo of spindle servo.
7	FCS. Srch	Apply same voltage as that of focus search to the focus drive to check the focus drive system.
→	Sled FWD	Move the sled outward. Perform this operation with the tracking servo turned off.
←	Sled REV	Move the sled inward. Perform this operation with the tracking servo turned off.
↑	Tilt UP	Move the tilt upward.
↓	Tilt DOWN	Move the tilt downward.

The following menus are normally not used.

3. Track/Layer Jump
4. Manual Adjustment
5. Auto Adjustment

The persons who do not know well about these menus should not use them.

6. Memory Check

```
EEPROM DATA              -- DL --
             CD SACD   SL  L0  L1
Focus Gain    xx xx    xx  xx  xx
TRK. Gain     xx xx    xx  xx  xx
Focus Offset  xx xx    xx  xx  xx
TRK. Offset   xx xx    xx  xx  xx
L. F. Offset  xx xx    xx  xx  xx
Analog FRSW   xx xx    xx  xx  xx
PLL DAC Gain  xx xx    xx  xx  xx
EQ Boost      xx xx    xx  xx  xx
Jitter        xx xx    xx  xx  xx
Mirror Time   xx       xx  xx
_            CLEAR: Default Set
```

This screen displays current servo adjusted data stored in the EEPROM. Though adjusted data can be initialized with the CLEAR key, they cannot be restored after initialization.
So, before clearing, make a note of the adjusted data.
For reference, the drive has been designed so that the gain center value is 20 and offset value is 80. Other values will be in a range of 10 to 80. If extreme value such as 00 or FF is set, adjustment will be faulty. In such a case, check for disc scratch or cable disconnection, then perform adjustment again.

7. 300 CHG MechaCon Menu 1

On this test mode screen, selecting 7 enables the adjustment from the front control panel such as disc loading. The following screen appears.

When 7 is selected in the Drive Manual Operation

```
  ## 300CHG MechaCon Menu 1 ##
ENTER     : Mecha Initial
PLAY      : Disc Load(FRONT)
STOP      : Disc UnLoad(FRONT)
OR/CL     : Door OPEN/CLOSE
UP        : UnChuck(FRONT)
DOWN      : Chuck(FRONT)
RIGHT     : Loading(FRONT)
LEFT      : UnLoading(FRONT)
Jog FOR   : Table R Step Turn
Jog PRV   : Table L Step Turn

RETURN:EXIT
```

ENTER Mecha Initial : Performs initialization of mechanism. Because the mechanical initialization is performed when the machine enters the Drive Manual Operation mode, use this item when an error such as adjustment error occurs.

PLAY Disc Load : Loads the disc from the chucking position of the T. table toward inside the MD.
When the Disc Load is selected, a series of operation starting from Unchucking – Loading – Chucking is performed.

STOP Disc Unload : Moves the disc from inside the MD to the T. table.
When the Disc Unload is selected, a series of operation starting from Unchucking – Unloading – Chucking is performed.

OP/CL Door OPEN/CLOSE : Opens and closes the door.

UP Un-chuck : Un-chucks the MD block.

DOWN Chuck : Chucks the MD block.

RIGHT Loading : Moves the disc from the un-chucked state to the T. table then to the MD block.

LEFT Unloading : Moves the disc from the un-chucked state to the MD block then to the T. table.

Jog FOR Table R step Turn: Moves the T. table to the right in units of slit. The T. table number is incremented in the direction of positive (+) number.

Jog PRV Table L step Turn: Moves the T. table to the left in units of slit. The T. table number is decremented in the direction of negative (-) number.

8. 300 CHG MechaCon Menu 2

On this test mode screen, selecting [8] enables the adjustment from the rear panel such as disc loading. The following screen appears.

When [8] is selected in the Drive Manual Operation

```
  ## 300CHG MechaCon Menu 2 ##
ENTER     : Mecha Initial
PLAY      : Disc Load(REAR)
STOP      : Disc UnLoad(REAR)
OR/CL     : Door OPEN/CLOSE
UP        : UnChuck(REAR)
DOWN      : Chuck(REAR)
RIGHT     : Loading(REAR)
LEFT      : UnLoading(REAR)
DISP      : Mecha Adjust
PAUSE     : TT offset Debug

RETURN:EXIT
```

Insertion and rejection of discs are performed from the rear panel. All operations are the same as those of the 300CHG MechaCon Menu-1 except [DISP] and [PAUSE].

[DISP] Mecha Adjust : When this item is selected, the machine enters the adjustment mode of the disc existence/non-existence sensor. The following screen appears.

[PAUSE] TT offset Debug: When this item is selected, load to the T, table is measured by changing the value of the PWM control to the motor. Never attempt to enter this mode. When this mode is selected, the machine needs to perform the Mecha Initial.

When Mecha Adjust is selected in the 300CHG Mecha Con Menu-2

```
    ## Mecha Adjust Mode ##
RIGHT     : Disc Sensor Adjust
LEFT      : TurnTable Adjust

TurnTable Data  : XX
SensorSensiv    : XX
Sensor Posi RP  : XX
Sensor Posi RM  : XX
Sensor Posi LP  : XX
Sensor Posi LM  : XX

          RETURN:EXIT
```

Turn Table Data : Indicates the center position of the slit. (Width of one slit = 24 pulses). The default value is 12.

Sensor Sensiv : Indicates sensitivity of the disc sensor. The normal value is ranging from 1 to 5.

Sensor Posi RP : These are not the important values.
Sensor Posi RM :
Sensor Posi LP :
Sensor Posi LM : They indicates the position of the disc sensor when the disc sensor monitors the disc when rotating the T. table. Rx indicates the value when the T. table is rotated clockwise and Lx indicates the value when the T. table is rotated counter-clockwise.

[RIGHT] : Enters the sensitivity adjustment mode of the disc sensor.

[LEFT] : Adjusts finely the center position of the slit in units of pulse using the Jog dial.

When Disc Sensor Adjust is selected in the 300CHG Mecha Con Menu-2

```
    ## Sensor Adjust Mode ##
DOWN      : Sensitivity Adjust
RIGHT     : Position Adjust R
LEFT      : Position Adjust L




          RETURN:EXIT
```

[DOWN] : Performs the sensitivity adjustment of the disc sensor by turning the T. table for a full rotation.

[RIGHT] : Determines the detection position of the T. table by counting the number of slit's tooth of the T. table when the T. table is turned clockwise by a full rotation.

[LEFT] : Determines the detection position of the T. table by counting the number of slit's tooth of the T. table when the T. table is turned counter-clockwise by a full rotation.

When Turn Table Adjust Mode is selected in the Mecha Adjust Mode

```
  ## Turn Table Adjust Mode ##
JOGFWD    : Right 1Step
JOGPRV    : Left 1Step
DMSFWD    : Right 2Step
DMSPRV    : Left 2Step
ENTER     : ENTER -> Exit

STEP      : 12

RETURN:Exit
```

Performs the fine adjustment of the slit position of the T. table using the Jog dial and the DMS (disc selection dial).

[JOGFWD] : Moves the T. table to the right by one pulse. STEP+

[JOGPRV] : Moves the T. table to the left by one pulse. STEP-

[DMSFWD] : Moves the T. table to the right by tow pulses. STEP++

[DMSPRV] : Moves the T. table to the left by two pulses. STEP-

[ENTER] : Determines the adjustment value ad the set value.

STEP : When the T. table is adjusted using the above commands, the adjustment position during each adjustment item is displayed. The initial value is set to 12.

When [PAUSE] is selected in the 300CHG Mecha Con Menu-2

```
 ## Turn Table Offset Debug ##
  NO   |  On   |  Off
   1   |   X   |  XX
   2   |   X   |  XX
   3   |   X   |  XX
   4   |   X   |  XX
   5   |   X   |  XX
PLAY   : Slow Turn (No.5)
STOP   : Turn Stop
PAUSE  : Change PWM

RETURN:Exit
```

[PLAY] : Moves the T. table slowly,

[STOP] :Stops movement of the T. table.

[PAUSE]: Sets the PWM value in the order starting from NO → On → Off.
This mode is prepared for measurement of the load to the T. table as described before. Result of the measurement is not reflected on adjustment. After this mode is selected, Mecha Initial must be performed.

6-6. MECHA AGING

When [3] is selected on this test mode screen, the machine enters the mechanical aging mode. The following screen appears. Do not use this mode.

```
      ### Mecha Aging ###

1.Please Select Aging mode
2.All Mecha : random Aging mode
3.All Mecha : + 1 Move
4.All Mecha : – 1 Move
5.All Mecha : 1 Disc Front
6.All Mecha : 1 Disc Rear
7.TurnTable : Random Move
8.TurnTable : Half Move
9.Door Open/Close

                    Exit:Return
```

6-7. EMERGENCY HISTORY

```
      ### MEG. History ###

Laser Hours     CD   xxxxxxxh
                DVD  xxxxxxxh

1. 00 00 00 00  00 00 00 00
   00 00 00 00  00 00 00 00

2. 00 00 00 00  00 00 00 00
   00 00 00 00  00 00 00 00

Select: 1 – 9  Scroll: UP/DOWN
(1: Last EMG.)  Exit: Return
```

On the Test Mode Menu screen, selecting [4] displays the information such as servo emergency history. The history information from last 1 up to 10 can be scrolled with [↑] key or [↓] key. Also, specific information can be displayed by directly entering that number with ten keys.

The upper two lines display the laser ON total hours. Data below minutes are omitted.

Clearing History Information

Clearing laser hours

◎ Press [DISPLAY] and [CLEAR] keys in this order.
Both CD and DVD data are cleared.

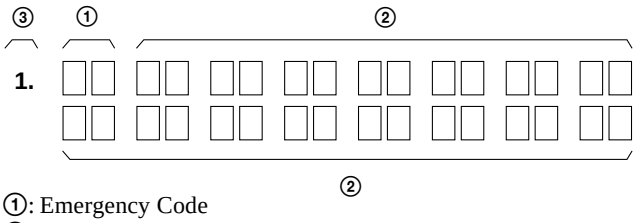
Clearing emergency history

◎ Press [TITLE] and [CLEAR] keys in this order.

Initializing set up data

◎ Press [DVD] and [CLEAR] keys in this order.
The data have been initialized when “Set Up Initialized” message is displayed. The EMG. History screen will be restored soon.

How to see Emergency History



①: Emergency Code
②: Don't Care
These codes are used for verification of software designing.
③: Historical order 1 to 9

Emergency Codes List

10: Communication to IC201 (MB-86 board) failed.
11: Each servo for focus, tracking, and spindle is unlocked.
12: Communication to EEPROM, IC101 (MB-86 board) failed.
13: Writing of hours meter data to EEPROM, IC101 (MB-86 board) failed.
14: Communication to Servo DSP IC404 (MB-86 board) failed, or Servo DSP is faulty.
20: Initialization of tilt servo and sled servo failed. They are not placed in the initial position.
21: Tilt servo operation error
22: Syscon made a request to move the tilt servo to wrong position.
23: Sled servo operation error
24: Syscon made a request to move the sled servo to wrong position.
30: Tracking balance adjustment error
31: Tracking gain adjustment error
32: Focus balance adjustment error
33: Focus bias adjustment error
34: Focus gain adjustment error
35: Tilt servo adjustment error
36: RF equalizer adjustment error
37: RF group delay adjustment error
38: Jitter value after adaptive servo operation is too large.
40: Focus servo does not operate.
41: With a dual layer (DL) disc, focus jump failed.
50: CLV (spindle) servo does not operate.
51: Spindle does not stop.
60: With a DVD disc, Syscon made a request to seek nonexistent address.
61: With a CD disc, Syscon made a request to seek nonexistent address.
62: With a CD disc, Syscon made a request to seek nonexistent track No. and index No.
63: With a DVD disc, seeking of target address failed.
64: With a CD disc, seeking of target address failed.
65: With a CD disc, seeking of target index failed.
70: With a DVD disc, physical information data could not be read.
71: With a CD disc, TOC data could not be read.
80: Disc type judgment failed.
81: As disc type judgment failed, retry was repeated.
82: As disc type judgment failed, a measurement error occurred.
83: Disc type could not be judged within the specified time.
84: Illegal command code was received from Syscon.
85: Illegal command was received from Syscon.

6-8. VERSION INFORMATION

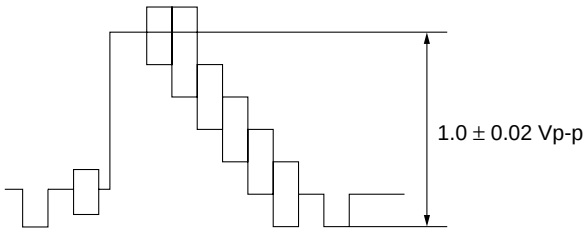
```
   ## Version Information ##

IF con.    Ver. x. xxx (xxxx)
           Group    00

SYScon.    Ver. x. xxx (xxxx)
           Model    xx
           Region   0x
Servo DSP. Ver. 1. xxxx


Exit: RETURN
```

On the Test Mode Menu screen, selecting [5] displays the ROM version and region code.
The parenthesized hexadecimal number in version field is checksum value of ROM.

6-9. VIDEO LEVEL ADJUSTMENT

On the Test Mode Menu screen, selecting [6] displays color bars for video level adjustment. During display of color bars, OSD disappears but the menu screen will be restored if pressing any key.

Measurement point : LINE OUT VIDEO
(75 Ω terminating resistance)
Measuring instrument : Oscilloscope
Adjustment device : RV501 on MB-86 board
Specified value : 1.0 ± 0.02 Vp-p



6-10. IF CON SELF DIAGNOSTIC FUNCTION

1. FR-173 BOARD (IF CON) TEST MODE

The FR-173 board (IF CON) test mode is the IF CON self diagnostic mode. The IF CON can diagnose the functions of the front panel boards that the IF CON controls. Normally, the IF CON makes a serial communication with the SYSTEM CONTROL and operates following thecommands from the SYSTEM CONTROL, but in the Test mode, the IF CON operates independently from the SYSTEM CONTROL.

In the Test mode, the following functions can be checked.

1. Button function
2. Remocon receiving function
3. SYSTEM CONTROL-IF CON serial communication
4. Click shuttle function
5. Fluorescent display tube lighting check
   Grid check
   Anode check
6. LED control function

In the Test mode, the set operates same as usual, except voltage monitoring, communication monitoring, display of fluorescent display tube, and LED control.

1. The routine that monitors +3.3 V (PON CHK) of MB-94 board is not provided.
2. The monitoring timer for serial communication with the SYSTEM CONTROL is not provided. The set is not placed in the Standby mode, even if the communication with SYSTEM CONTROL is normal.
3. Display of fluorescent display tube (normally, display is made following the commands from SYSTEM CONTROL)
4. LED control (normally, control is made following the commands from SYSTEM CONTROL)

2. OPERATION OF SELF CHECK MODE

The Self Check mode is the function to conduct the basic test to the FL display and DVD panel section.

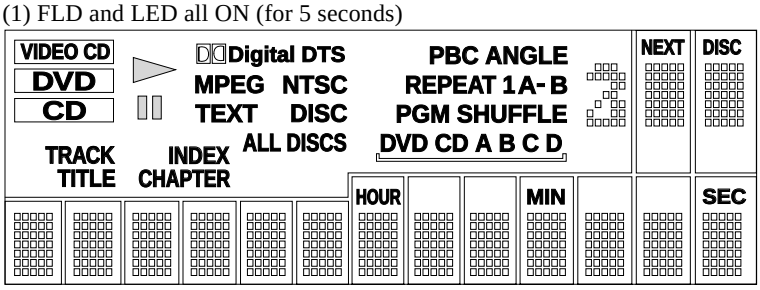
2-1. Self Check Mode Transition Processing

While pressing the [STOP] key on the main unit with the IF CON in STANDBY mode, enter [RETURN] → [DISPLAY] (or [SET UP]) on the remote commander, and the unit transits to the Self Check Mode. The Self Check mode terminates when the IF CON transits to the STANDBY mode.

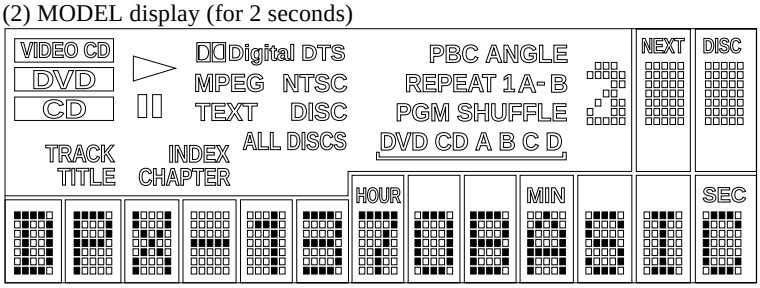
2-2. Operation of Auto Self Check

When the Self Check mode becomes active at the AC Power ON or by key input, the test display of the following steps (1) to (4) is repeated.

(1) FLD and LED all ON (for 5 seconds)

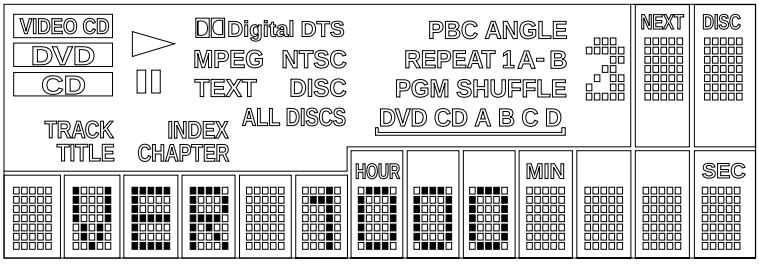


(2) MODEL display (for 2 seconds)

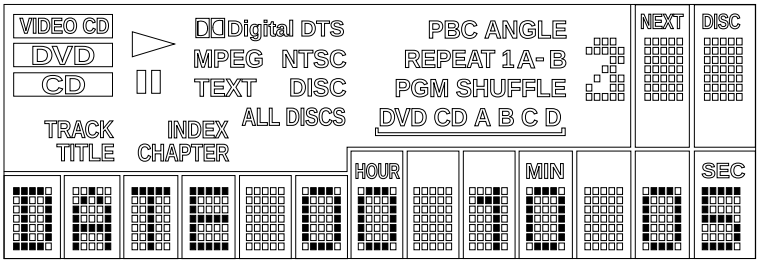


Contents of display
“DPX-1370” Basic
“DPX-1375” DD

(3) Version display (for 2 seconds)



(4) ROM creation date display (for 2 seconds)



2-3. Each Self Check Function

Each Self Check function tests the FLD display, LED display, and key input.

DPX1370 (300-Disc) IC106

No.	Input Voltage (V)	A/D	Resistor	Pin ① (AN5)	HEX	Pin ② (AN4)	HEX	Pin ③ (AN3)	HEX	Pin ④ (AN2)	HEX
0	0 – 0.1	0 – 20	10K(PULL)	STOP	01	EJECT	94	LOAD	8C	SURROUND	7D
1	0.55 – 0.76	113 – 156	1500	PAUSE	02	OPEN/CLOSE	09	REPEAT	0F	DVE/DIMMER	5F
2	1.14 – 1.42	233 – 291	1800	LEFT	07	PLAY	0A	TIME/TEXT	21	FOLDER A	85
3	1.76 – 2.1	360 – 430	2700	DOWN	06	MEGA CONT	23	SHUFFLE	56	FOLDER B	86
4	2.28 – 2.64	467 – 541	3300	ENTER	05	EASY PLAY	91	1/ALL DISCS	8E	FOLDER C	88
5	2.79 – 3.13	571 – 641	4700	UP	04	FLIP	95	TITLE	0E	FOLDER D	89
6	3.34 – 3.62	684 – 741	8200	RIGHT	03	DISC CHANGE	93	DISPLAY	57	FOLDER ALL	90
7	3.85 – 4.06	788 – 831	15K	JOG	08	DIRECT SEARCH	92	DVD MENU	0D	FOLDER DVD	84
8	4.43 – 4.64	907 – 950	56K	ACS-ENTER	2C			RETURN	0F	FOLDER CD	87

2-3-1. FLD and LED All ON

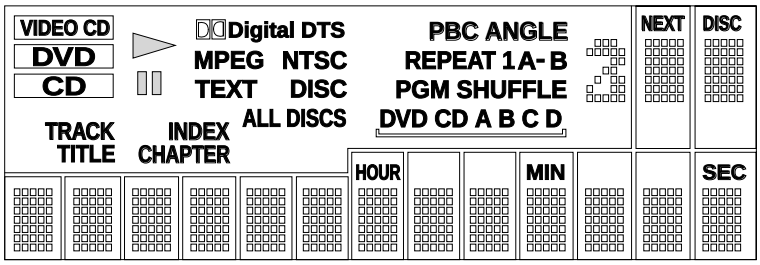
2-3-1-1. Transition Keys in Self Check Mode

- [STOP] key and [PLAY] key on the main unit
- [LEFT] key on the main unit and the remote commander

2-3-1-2. Operation and Display

In this mode, all LEDs except STANDBY LED and all segments of FLD turn ON.

Example of FLD all ON



2-3-2. Main Unit Key Name Display and Key Code Display

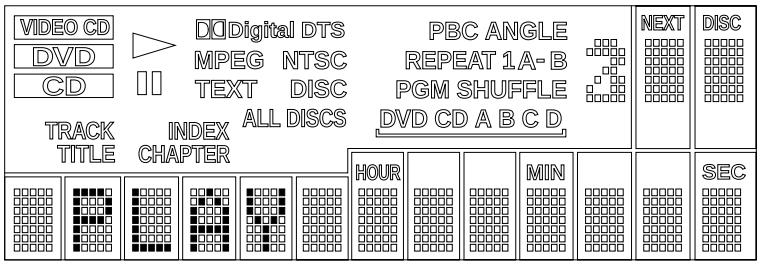
2-3-2-1. Transition Keys in Self Check Mode

- Keys on main unit except keys transited in self check

2-3-2-2. Operation and Display

When a key on the main unit is pressed in the Self Check mode, the name of that key is displayed on the FLD. Also, the key name display and the key code display can be switched with the [DISPLAY] key on the remote commander. “NOTHING” is displayed when nothing is entered. Also, VIDEO CD, DVD, and CD segments turn on when a communication error occurred.

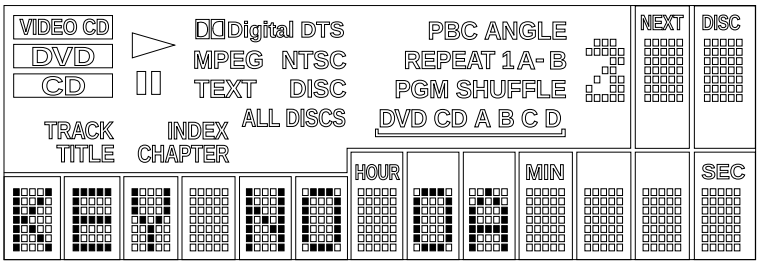
FLD display (at input of [PLAY] key on the main unit)



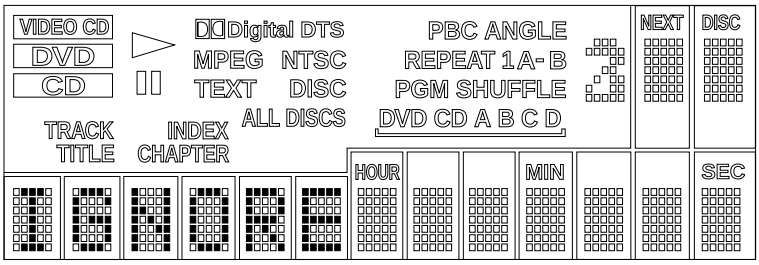
- When the ACS key is used: (Display: ACS TEST ▦)
  The ACS key can be tested by rotating the knob.

- When the ENTER key is used: (Display: KEYBOARD TEST)
  The keyboard input can be tested by connecting the keyboard.

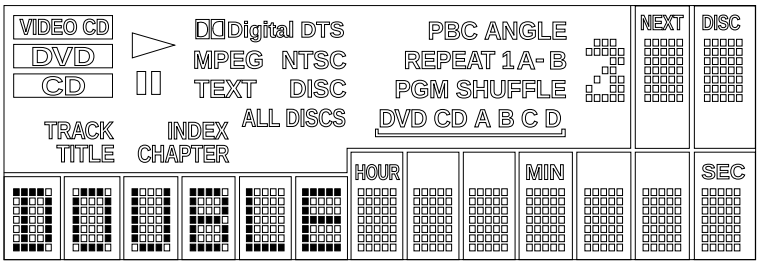
Key code display (at input of [PLAY] key, Key code: 0Ah)



At input of faulty voltage



When two keys are pressed



2-3-3. Remote Commander Key Name Display and Key Code Display

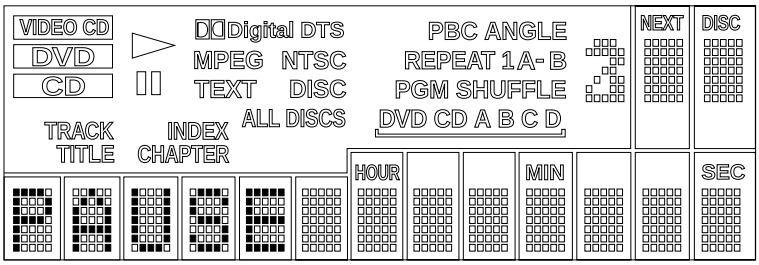
2-3-3-1. Transition Keys in Self Check Mode

- Remote commander keys except keys transited in self check

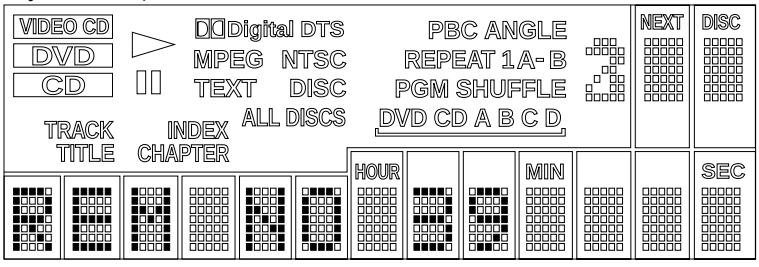
2-3-3-2. Operation and Display

When a key on the remote commander is pressed in the Self Check mode, the name of that key is displayed on the FLD. Also, the key name display and the key code display can be switched with the [DISPLAY] key on the remote commander. “NOTHING” is displayed when nothing is entered. Also, VIDEO CD, DVD, and CD segments turn on when a communication error occurred.

Remote commander key name display (at input of [PAUSE] key)



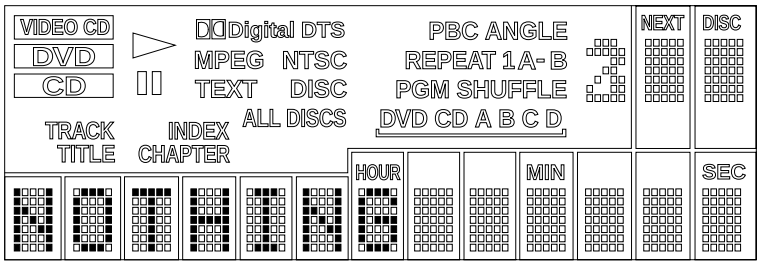
Remote commander key code display (at input of [PAUSE] key, Key code: 39h)



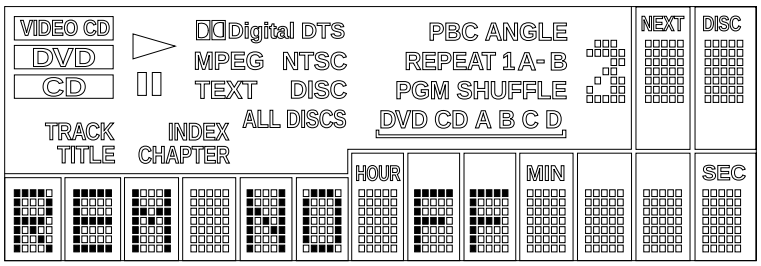
2-3-4. Communication Monitoring Display

The communication state is monitored and displayed while the key name on the main unit and the remote commander is displayed. When the communication to the System Controller failed, VIDEO CD, DVD, and CD segments turn on.

Communication error display (at no key input)



Communication error display (at code display without input of the remote commander)



2-3-5. FLD Anode Test Display and SHUTTLE Click Operation Test

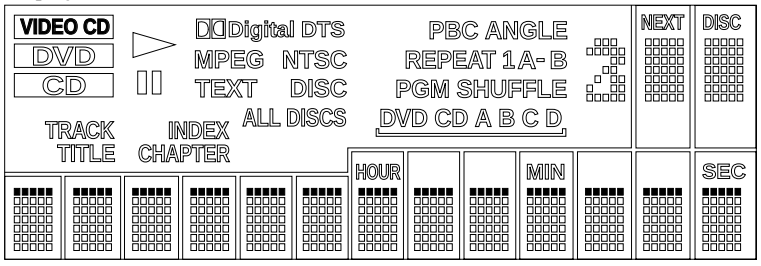
2-3-5-1. Transition Keys in Self Check Mode

- RIGHT on the main unit and the remote commander
- SHUTTLE on the main unit and the remote commander during Anode Test display

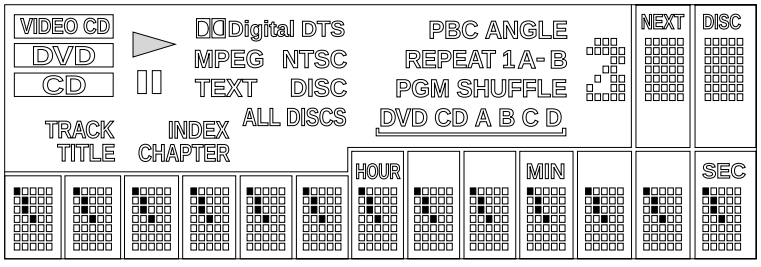
2-3-5-2. Operation and Display

The Self Check mode transits to this mode when RIGHT key is entered. Only the first segment of each grid of FLD turns on, and each time the SHUTTLE is entered, the segment of each grid is switched in order. When SHUTTLE input is clockwise, the segment switches in 1 → 2 → 3 direction, or counterclockwise it switches in 3 → 2 → 1 direction. This tests whether each segment turns on individually. Also, if the main unit does not have the JOG/SHUTTLE, use the remote commander JOG/SHUTTLE to switch over the segment display position.

Display at the start of Anode Test



↓ (Input in CW direction)



2-3-6. FLD Grid Test Display and SHUTTLE Click Operation Test

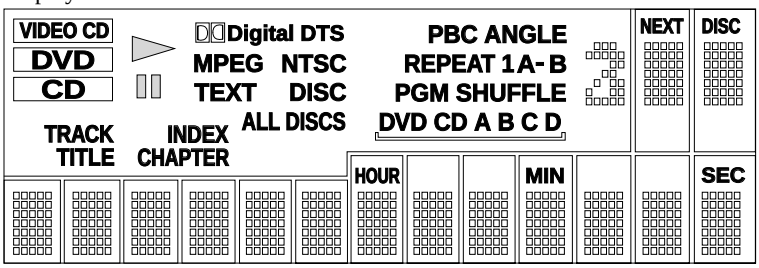
2-3-6-1. Transition Keys in Self Check Mode

- UP on the main unit and the remote commander
- SHUTTLE on the main unit and the remote commander during Grid Test display

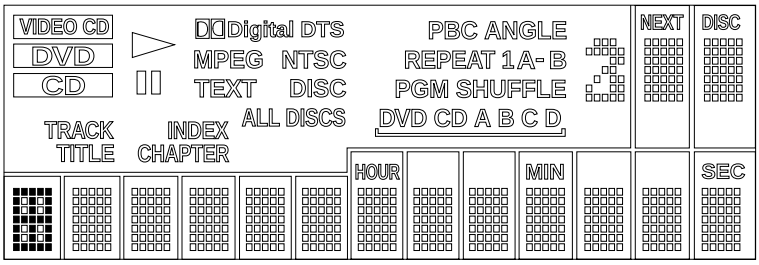
2-3-6-2. Operation and Display

The Self Check mode transits to this mode when UP key is entered. The first grid of FLD all turns on and other grids turn off. Each time the SHUTTLE is entered, the grid is switched in order. When SHUTTLE input is clockwise, the grid switches in 1 → 2 → 3 direction, or counterclockwise it switches in 3 → 2 → 1 direction. This tests whether each grid turns on individually.

Display at the start of Grid Test



↓ (Input in CW direction)



2-3-7. LED Test Display

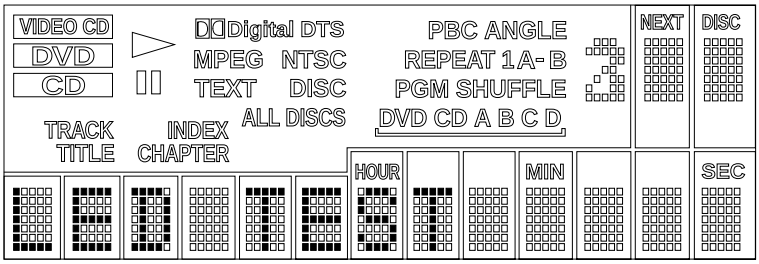
2-3-7-1. Transition Keys in Self Check Mode

- DOWN on the main unit and the remote commander
- SHUTTLE on the main unit and the remote commander during LED Test display

2-3-7-2. Operation and Display

LED is switched in order by the input of JOG/SHUTTLE. Also, LED ON/OFF is switched by the input of same key as the function that turns on the LED concerned. For the MULTI LED only, there is no key which switches that function, and therefore use the RETURN key on the main unit.

FLD display during LED Test



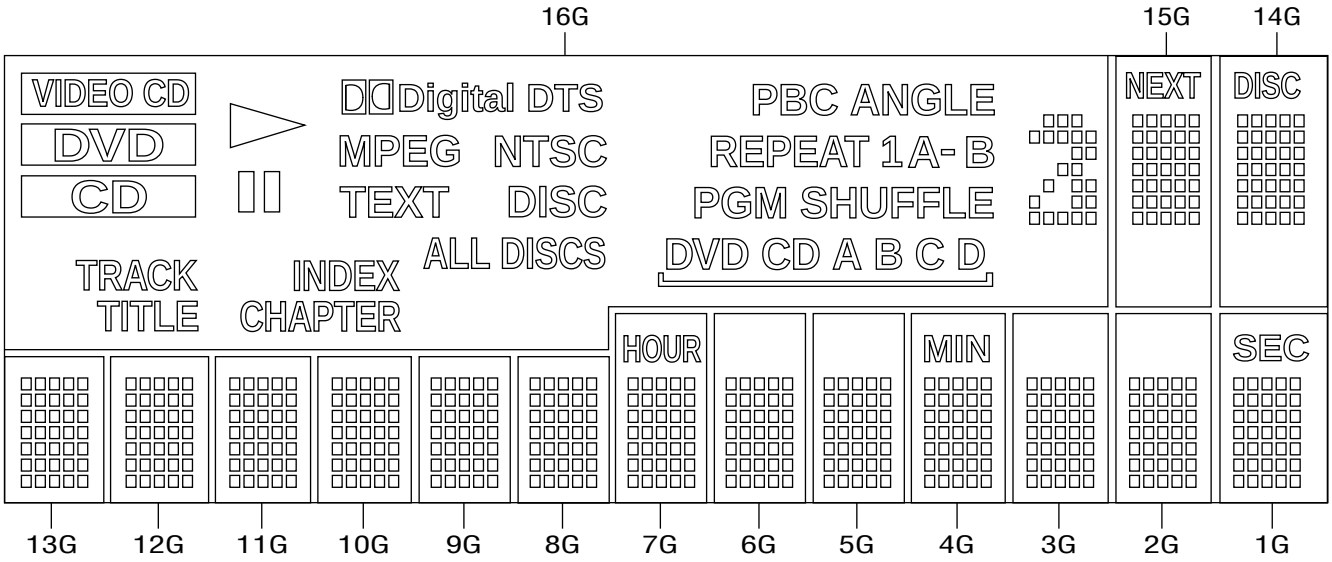
2-3-8. Beep Sound Test

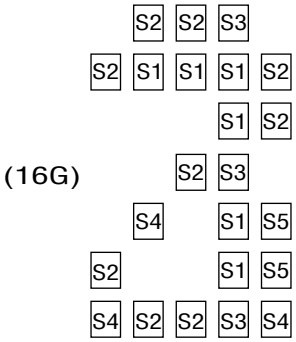
2-3-8-1. Transition Keys in Self Check Mode

- Input of a key on main unit

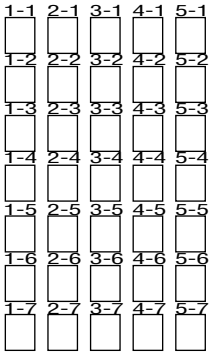
2-3-8-2. Operation and Display

In the Self Check mode, each time a key on the main unit is entered, a beep sound of 2kHz (100ms) is generated.





(16G)



(15G to 1G)

ANODE CONNECTION

	16G	15G	14G	13G to 8G	7G	6G to 5G	4G	3G to 2G	1G
P1	VIDEO CD	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1
P2	DVD	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1
P3	CD	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1
P4	TRACK	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1
P5	TITLE	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1
P6	▷	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2
P7	▯▯	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2
P8	CHAPTER	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2
P9	INDEX	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2
P10	Digital	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2
P11	DTS	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3
P12	PBC	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3
P13	ANGLE	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3
P14	S1	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3
P15	S2	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3
P16	S3	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
P17	S4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4
P18	S5	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4

	16G	15G	14G	13G to 8G	7G	6G to 5G	4G	3G to 2G	1G
P19	MPEG	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4
P20	TEXT	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4
P21	NTSC	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
P22	REPEAT	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5
P23	[REPEAT] 1	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5
P24	A-	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5
P25	B	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5
P26	▭	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6
P27	DVD	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6
P28	CD	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6
P29	A	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6
P30	B	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6
P31	C	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7
P32	D	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7
P33	ALL DISCS	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7
P34	DISC	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7
P35	PGM	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7
P36	SHUFFLE	NEXT	DISC	–	HOUR	–	MIN	–	SEC

3. TROUBLESHOOTING

3-1. Test Mode is not activated

With the set assembled in the front panel, the Test mode does not become active if any button was pressed by any reason.Under this condition, the power is not turned on even in the normal status. (The set is kept in Standby status = Red LED is kept on) Not only the buttons are inactive, but also a signal from remote commander is not accepted. The IF CON checks the self check port only after the power on reset (only when AC is supplied; not in Standby status). If any button was pressed, the button name should be displayed on the FL display tube. Though no button is pressed this time, display of other than NOTHING implies that the button was pressed.

3-2. Power is not turned on

① Red (STANDBY) LED does not light up when AC was supplied. The power (EVER 5.0 V) is not supplied.
X101 is not oscillating.

② Red (STANDBY) LED is kept on though POWER button was pressed. Any button is kept pressed.
PONCHK (IF CON pin ⑥) is over 0.1 V.

③ Green LED lights up when POWER button was pressed, but red LED lights up again after several seconds. PONCHK (IF CON pin ⑥) is abnormal. (Slow rise time from 0.1 V to 1.5 V. Voltage must be less than 1.5 V)
SYSTEM CONTROL does not operate normally.

SECTION 7
ELECTRICAL ADJUSTMENT

This section describes procedures and instructions necessary for adjusting electrical circuits in this set.

Instruments required:

1) Color monitor TV
2) Oscilloscope 1 or 2 phenomena, band width over 100 MHz, with delay mode
3) Digital voltmeter
4) Standard commander RMT-233A (NTSC)
   RMT-233P (PAL)
   RMT-234A (NTSC)
5) DVD reference disc
   HLX-501 (J-6090-071-A)(dual layer)(NTSC)
   HLX-503 (J-6090-069-A)(single layer)(NTSC)
   HLX-504 (J-6090-088-A)(single layer)(NTSC)
   HLX-505 (J-6090-089-A)(dual layer)(NTSC)
   HLX-506 (J-6090-077-A)(single layer)(PAL)
   HLX-507 (J-6090-078-A)(dual layer)(PAL)
6) SACD reference disc
   HLXA-509 (J-6090-090-A)
   Extension cable (J-6090-102-A)

7-1. POWER SUPPLY ADJUSTMENT

1. MPW124V Board

Mode	E-E
Instrument	Digital voltmeter
SW+5 V Check	
Test point	CN101 pin ⑤,⑥
Specification	5.0 ± 0.2 Vdc
SW+3.3 V Check	
Test point	CN101 pin ⑧,⑨
Specification	3.3 ± 0.2 Vdc
EVER+5 V Check	
Test point	CN101 pin ⑦
Specification	5.0 ± 0.2 Vdc
SW +11 V Check	
Test point	CN101 pin ③,④
Specification	11.0 ± 1.0 Vdc
SW -11 V Check	
Test point	CN101 pin ⑭,⑮
Specification	–11.0 ± 1.0 Vdc

Checking method:

1) Confirm that each voltage satisfies the specification.

7-2. ADJUSTMENT OF VIDEO SYSTEM

1. Video Level Adjustment (MB-94 BOARD)

<Purpose>

This adjustment is made to satisfy the NTSC/PAL standard, and if not adjusted correctly, the brightness will be too large or small.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	LINE OUT (VIDEO) connector (75 Ω terminated)
Instrument	Oscilloscope
Adjusting element	RV501
Specification	1.00 $^{+0.04}_{-0.02}$ Vp-p

Adjusting method:

1) In the test mode initial menu "6" Video Level Adjustment, set so that color bars are generated.
2) Adjust the RV501 to attain 1.0 $^{+0.04}_{-0.02}$ Vp-p.

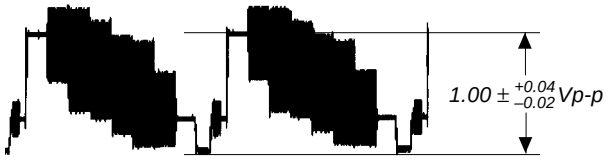


Fig. 8-1

2. S-terminal

2-1. Y Output Check (MB-94 BOARD)

<Purpose>

Check S-terminal video output. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with a S-terminal cable.

Mode	Playback mode
Signal	Color bars
Test point	S VIDEO OUT (S-Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.00 ± 0.05 Vp-p

Checking method:

1) Confirm that the S-Y level is 1.00 ± 0.05 Vp-p.

Fig. 8-2

2-2. C Output Check (MB-94 BOARD)

<Purpose>

Checks S-terminal video output. If it is incorrect picture will not be displayed correctly in spite of connection to the TV with a S-terminal cable.

Mode	Playback mode
Signal	Color bars
Test point	S VIDEO OUT (S-C) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	A=300 ± 100 mVp-p (PAL)

Checking method:

1) Confirm that the S-C burst is A=286 ± 30 mVp-p (NTSC), A=300 mVp-p (PAL).

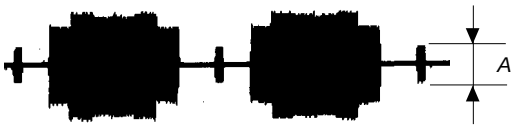


Fig. 8-3

3. Checking Component Video Output (MB-94 BOARD)

Note:

CONPONENT OUT should be set to ON in AEP, UK model.

3-1. Y Output level Check

<Purpose>

This checks component video output Y. If it is incorrect, correct brightness will not be attained when connected to, for instance, projector.

Mode	Playback mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.00 ± 0.05 Vp-p

Checking method:

1) Confirm that the Y level is 1.00 ± 0.05 Vp-p.

Fig. 8-4

3-2. C_B/B-Y Output level check (MB-94 BOARD)

<Purpose>

This checks component video output B-Y. If it is incorrect, cor-rect colors will not be displayed when connected to, for instance, projector.

Mode	Playback mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (B-Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	700 ± 50 mVp-p

Checking method:

1) Confirm that the B-Y level is 700 ± 50 mVp-p.

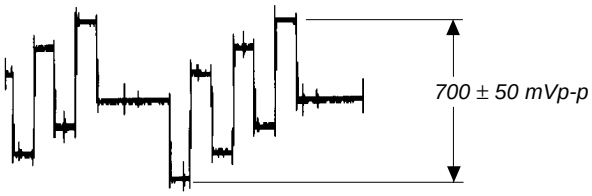


Fig. 8-5

3-3. C_R/R-Y Output level check

<Purpose>

This checks component video output R-Y. If it is incorrect, cor-rect colors will not be displayed when connected to, for instance, projector.

Mode	Playback mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (R-Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	700 ± 50 mVp-p

Checking method:

1) Confirm that the R-Y level is 700 ± 50 mVp-p.

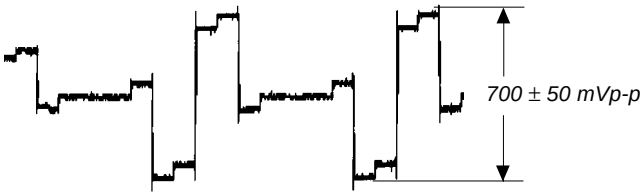


Fig. 8-6

7-3. CHECK OF AUDIO SYSTEM

Mode	Playback mode
Signal	1KHz 0dBs (YEDS-18 (TYPE4) track no.2)
Test point	Audio out (L, R)
Instrument	Oscilloscope
Specification	6.4 ± 0.7 Vp-p

Checking method:

1) Confirm that the output level 6.4 ± 0.7 Vp-p.

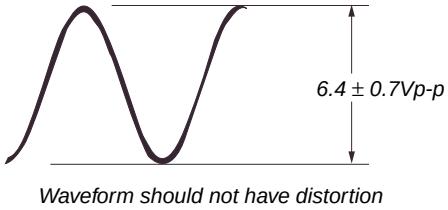


Fig. 8-7

MEMO

SECTION 8
REPAIR PARTS LIST

8-1. EXPLODED VIEWS

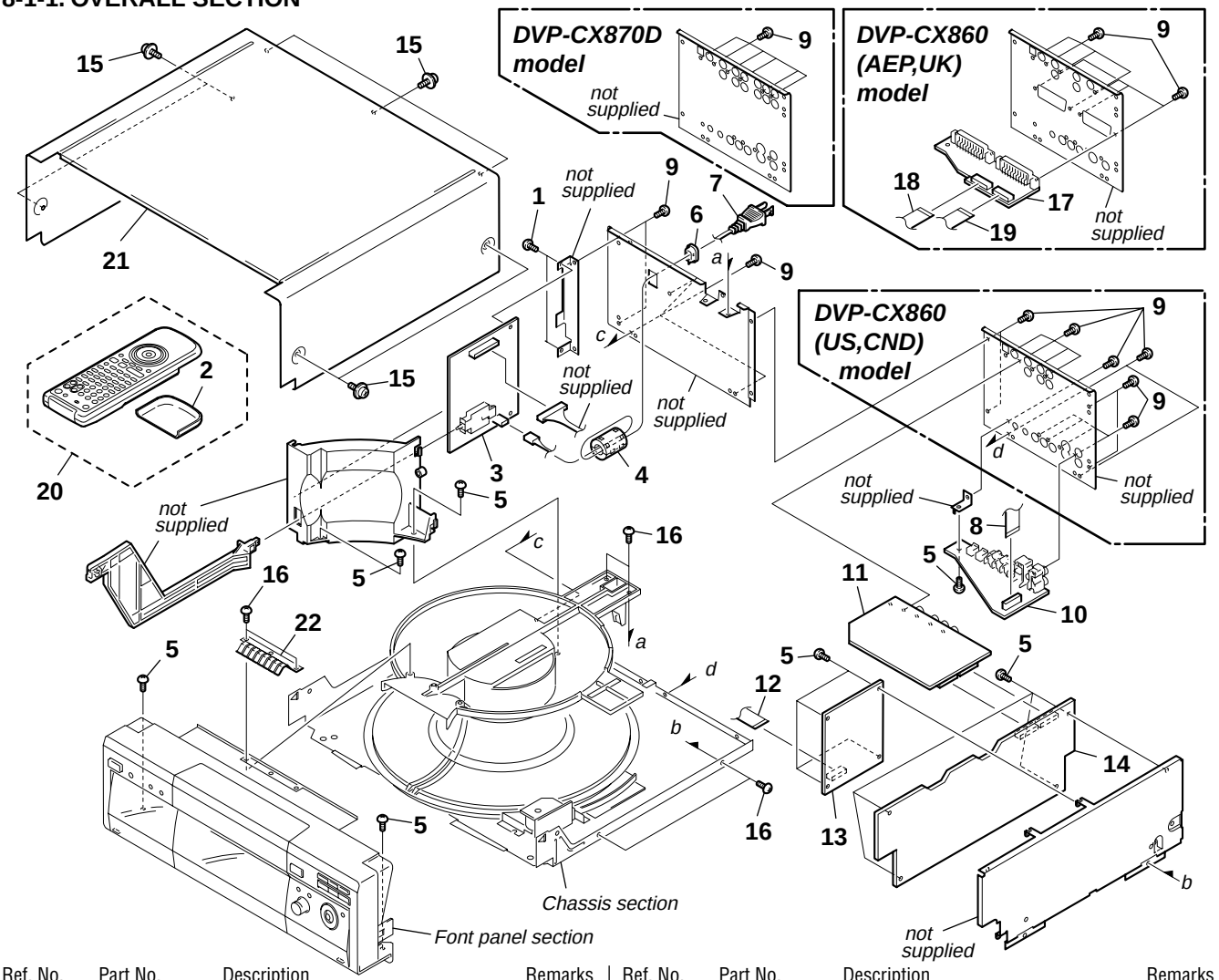
NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  CND: Canadian model

The components identified by mark ⚠or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

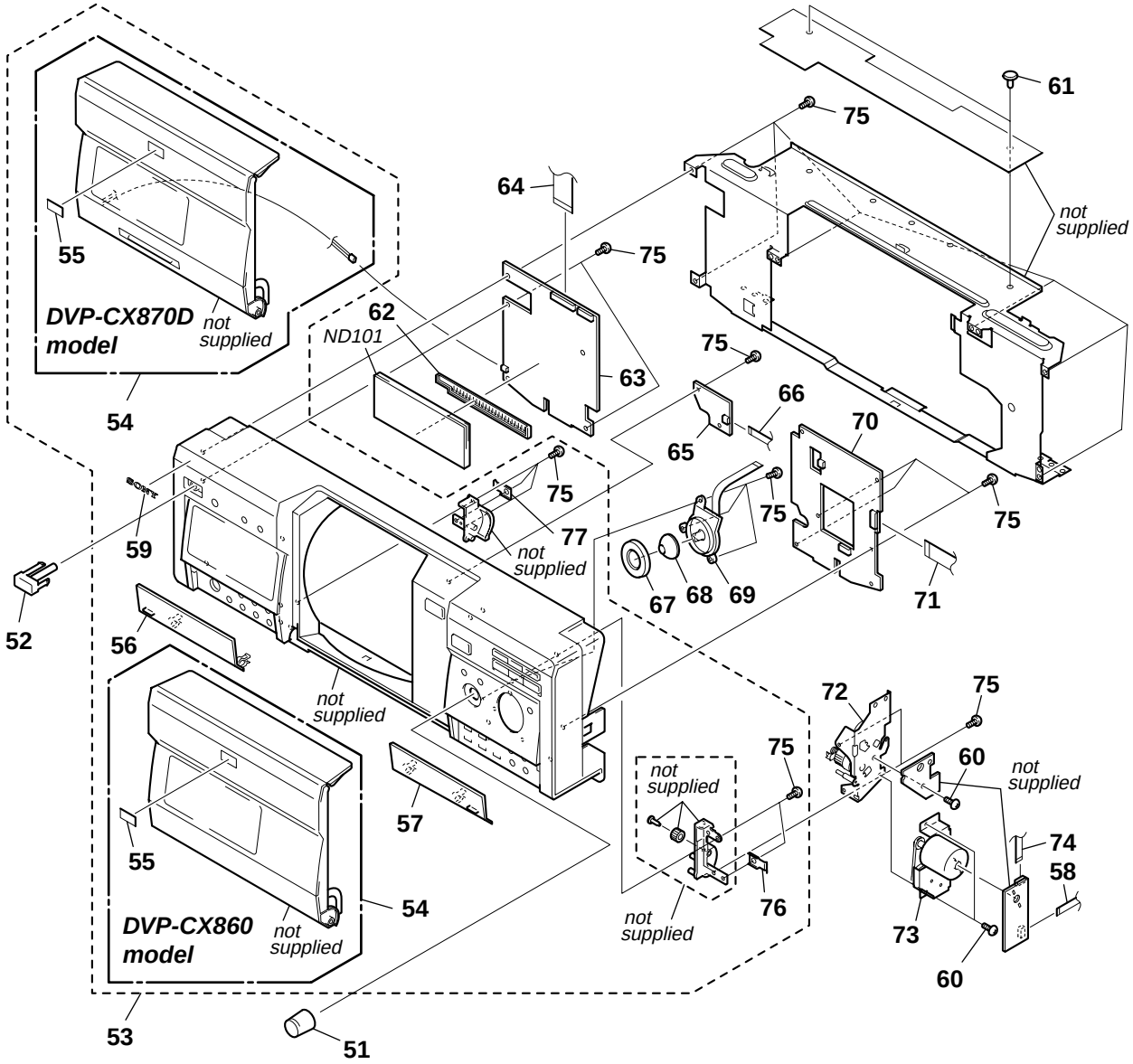
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

8-1-1. OVERALL SECTION

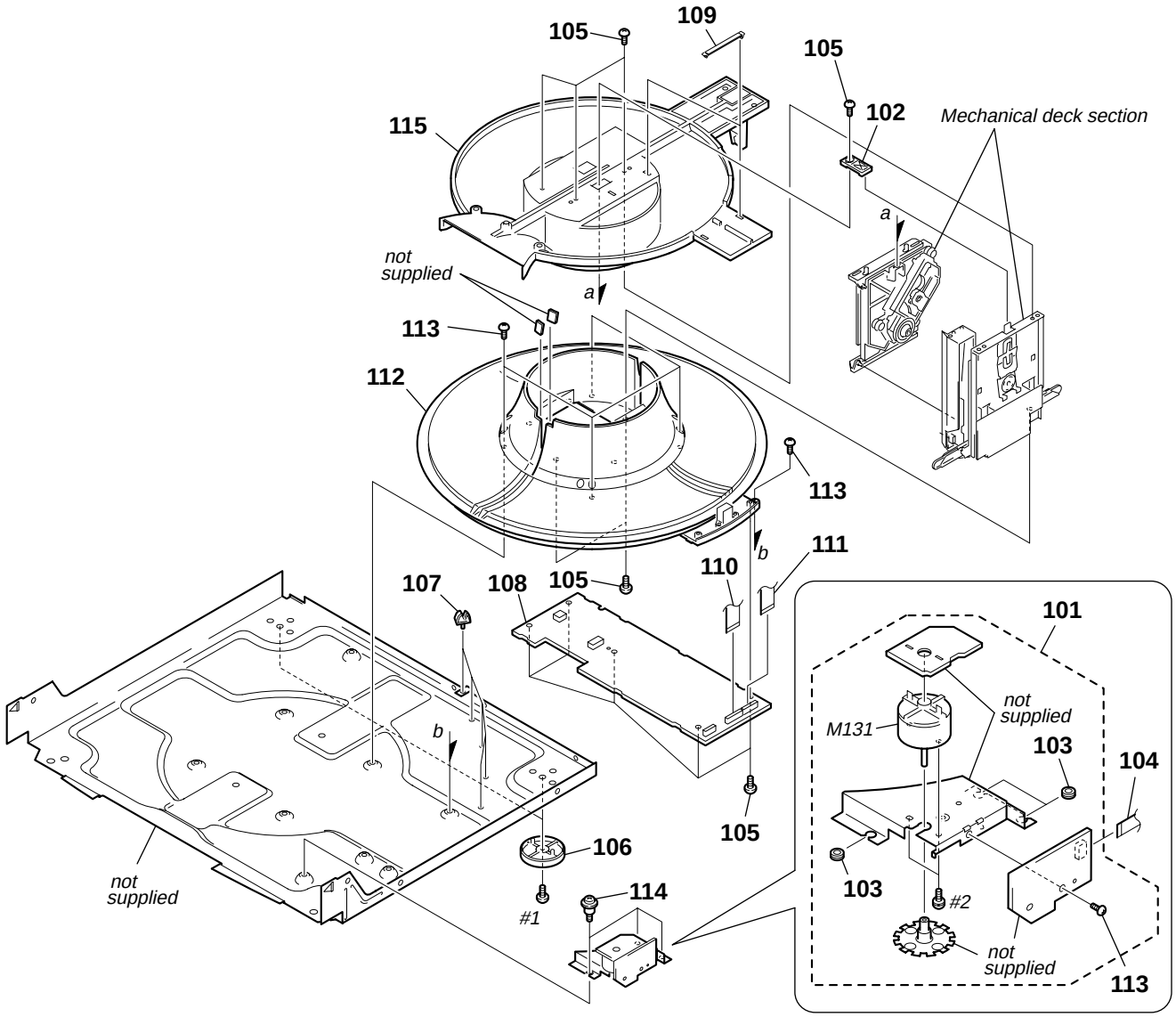


Ref. No.	Part No.	Description	Remarks
1	3-970-608-01	SUMITITE (B3), +BV	
2	3-709-493-11	COVER, BATTERY	
⚠3	1-468-512-11	POWER BLOCK (MPW1241)	(CX860:US,CND/CX870D)
⚠3	1-468-512-21	POWER BLOCK (MPW1141)	(CX860:AEP,UK)
4	1-500-386-11	FILTER, CLAMP (FERRITE CORE)	
5	3-970-608-01	SUMITITE (B3), +BV	
6	4-966-267-12	BUSHING (FBS001), CORD	
⚠7	1-782-960-11	CORD,POWER (CX860:AEP,UK)	
⚠7	1-783-531-31	CORD,POWER (CX860:US,CND)	
⚠7	1-757-281-11	CORD,POWER (CX870D)	
8	1-757-222-11	CABLE, FLAT (FAC-011)	
9	3-053-984-11	SCREW(+BV/CU) (CX870D)	
9	3-970-608-51	SUMITITE (B3), +BV (CX860)	
* 10	A-6065-603-A	CV-34 BOARD, COMPLETE (CX860:AEP,UK)	
* 10	A-6065-614-A	CV-34 BOARD, COMPLETE (CX860:US,CND)	
* 10	A-6065-627-A	CV-34 BOARD, COMPLETE (CX870D)	
* 11	A-6065-602-A	CH-98 BOARD, COMPLETE (CX860:AEP,UK)	
* 11	A-6065-613-A	CH-98 BOARD, COMPLETE (CX860:US,CND)	
* 11	A-6065-626-A	CH-98 BOARD, COMPLETE (CX870D)	
12	1-757-225-11	CABLE, FLAT (FAM-007)	
* 13	A-6065-600-A	MB-94 BOARD, COMPLETE (CX860:AEP,UK)	
* 13	A-6065-611-A	MB-94 BOARD, COMPLETE (CX860:US,CND)	
* 13	A-6065-624-A	MB-94 BOARD, COMPLETE (CX870D)	
* 14	A-6065-601-A	AI-20 BOARD, COMPLETE (CX860:AEP,UK)	
* 14	A-6065-612-A	AI-20 BOARD, COMPLETE (CX860:US,CND)	
* 14	A-6065-625-A	AI-20 BOARD, COMPLETE (CX870D)	
15	3-710-901-41	SCREW, TAPPING	
16	3-970-608-21	SUMITITE (B3), +BV	
* 17	A-6065-607-A	ER-12 BOARD, COMPLETE (CX860:AEP,UK)	
18	1-757-236-11	CABLE, FLAT (FAE-003) (CX860:AEP,UK)	
19	1-757-235-11	CABLE, FLAT (FAE-002) (CX860:AEP,UK)	
20	1-476-249-61	REMOTE COMMANDER (RMT-D123A)	(CX860:US,CND)
20	1-476-249-71	REMOTE COMMANDER (RMT-D123P)	(CX860:AEP,UK)
20	1-476-249-81	REMOTE COMMANDER (RMT-D124A)	(CX870D)
21	3-066-717-01	CASE, UPPER (CX860)	
21	A-6062-513-A	CASE ASSY, UPPER (CX870D)	
22	3-065-531-01	SPRING (H), GROUND PLATE	

8-1-2. FRONT PANEL SECTION


DVP-CX870D model
not supplied
DVP-CX860 model
not supplied
ND101
not supplied
not supplied
not supplied

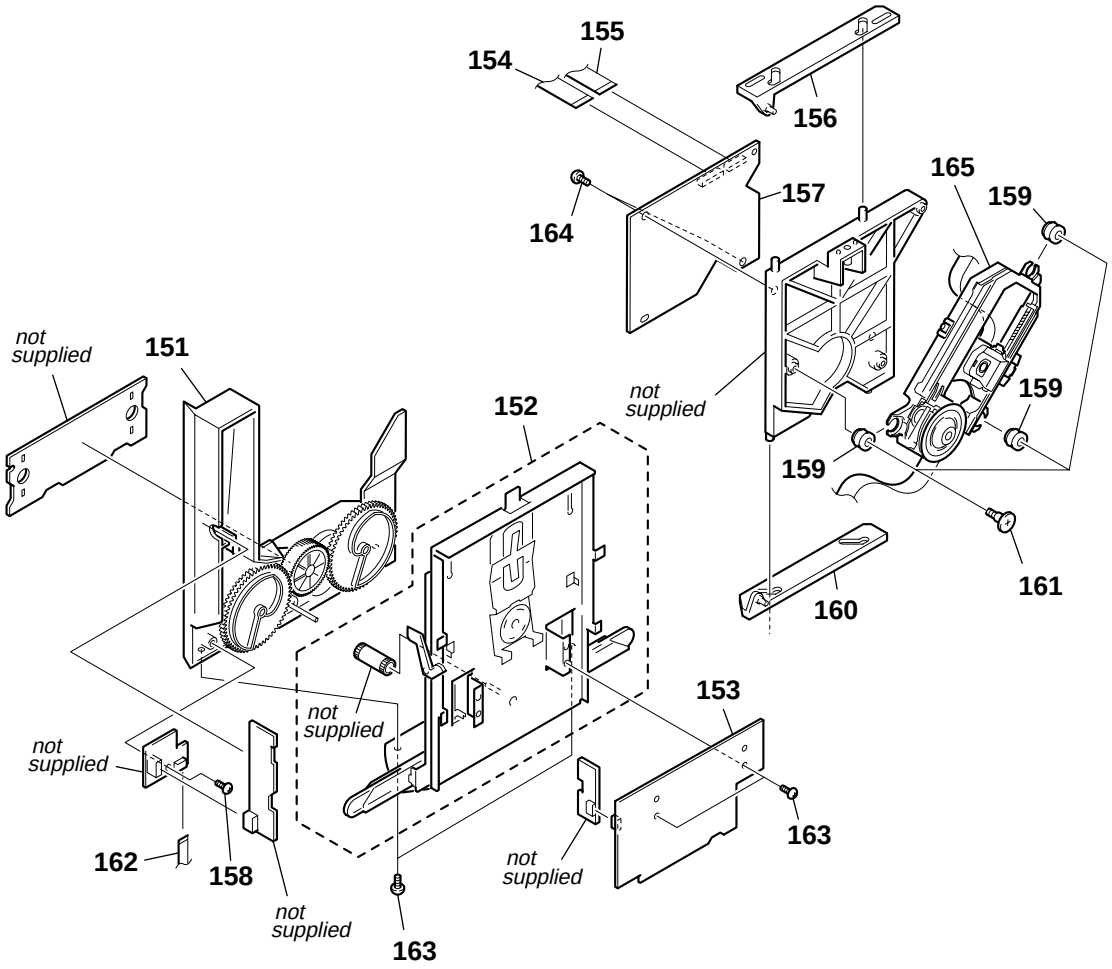
8-1-3. CHASSIS SECTION



Ref. No.	Part No.	Description	Remarks
101	A-6062-493-A	DRIVING ASSY, T	
102	3-064-063-01	LINK, CHUCK DRIVING	
103	3-570-118-00	CUSHION, MOTOR	
104	1-757-229-11	CABLE, FLAT (FTC-003)	
105	3-058-511-21	+BV IBR	
106	4-948-027-11	FOOT (DIA. 50)	
107	4-070-274-01	CLAMP	
* 108	A-6065-604-A	CK-97 BOARD, COMPLETE (CX860:AEP,UK)	
* 108	A-6065-615-A	CK-97 BOARD, COMPLETE (CX860:US,CND)	
* 108	A-6065-628-A	CK-97 BOARD, COMPLETE (CX870D)	

Ref. No.	Part No.	Description	Remarks
109	3-064-084-01	CLAMP (FCR-60), FLAT	
110	1-757-223-11	CABLE, FLAT (FAK-001)	
111	1-757-228-11	CABLE, FLAT (FMC-014)	
112	A-6062-496-A	TABLE ASSY, TURN (CX860)	
112	A-6062-502-A	TABLE ASSY (75), TURN (CX870D)	
113	3-970-608-01	SUMITITE (B3), +BV	
114	3-064-062-01	SCREW, CUSHION STOPPER	
115	X-3951-016-1	GUIDE ASSY, CENTER	
M131	1-541-632-11	MOTOR, DC	

8-1-4. MECHANISM SECTION



Ref. No.	Part No.	Description	Remarks
151	A-6062-494-A	CHASSIS BLOCK ASSY, MECHANICAL	
152	A-6062-495-A	FRAME BLOCK ASSY, CHUCK	
153	A-6065-616-A	LS-55 BOARD, COMPLETE	
154	1-757-226-11	CABLE, FLAT (FMK-005)	
155	1-757-227-11	CABLE, FLAT (FMK-006)	
156	3-064-080-01	SLIDER (U)	
* 157	A-6065-632-A	TK-59 BOARD, COMPLETE	
158	3-669-480-11	+PTPWH2	

Ref. No.	Part No.	Description	Remarks
159	3-057-023-01	INSULATOR (RB)	
160	3-064-081-01	SLIDER (B)	
161	4-981-923-01	SCREW (M), STEP	
162	1-757-233-11	CABLE, FLAT (FLC-002)	
163	3-970-608-21	SUMITITE (B3), +BV	
164	4-951-620-01	SCREW (2.6X8), +BVTP	
⚠165	A-6062-397-A	DEVICE, OPTICAL KHM220AAA/J1RP1	(SERVICE)

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

8-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- Abbreviation
  CND: Canadian model

Ref. No.	Part No.	Description			Remarks
*	A-6065-601-A	AI-20 BOARD, COMPLETE (CX860:AEP,UK)			
		**********			
*	A-6065-612-A	AI-20 BOARD, COMPLETE (CX860:US,CND)			
		**********			
*	A-6065-625-A	AI-20 BOARD, COMPLETE (CX870D)			
		**********			
					(Ref.No.;3000Series)
		< CAPACITOR >			
C101	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C102	1-104-664-11	ELECT	47uF	20%	16V
C103	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C104	1-104-665-11	ELECT	100uF	20%	25V
C114	1-128-551-11	ELECT	22uF	20%	25V
C115	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C116	1-128-551-11	ELECT	22uF	20%	25V
C117	1-128-551-11	ELECT	22uF	20%	25V
C118	1-128-551-11	ELECT	22uF	20%	25V
C119	1-128-551-11	ELECT	22uF	20%	25V
C122	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C123	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C124	1-104-664-11	ELECT	47uF	20%	25V
C125	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C131	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C132	1-104-665-11	ELECT	100uF	20%	10V
C133	1-126-933-11	ELECT	100uF	20%	16V
C134	1-104-664-11	ELECT	47uF	20%	16V
C135	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C136	1-126-924-11	ELECT	330uF	20%	6.3V
C137	1-104-664-11	ELECT	47uF	20%	16V
C138	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C139	1-104-665-11	ELECT	100uF	20%	10V
C201	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C203	1-126-965-11	ELECT	22uF	20%	50V
					(CX870D)
C208	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
					(CX870D)
C209	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
					(CX870D)
C210	1-126-965-11	ELECT	22uF	20%	50V
					(CX870D)
C211	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
					(CX870D)
C212	1-126-934-11	ELECT	220uF	20%	16V
					(CX860)

Ref. No.	Part No.	Description			Remarks
C212	1-126-926-11	ELECT	1000uF	20%	10V
					(CX870D)
C213	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
					(CX860:AEP,UK/CX870D)
C214	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
					(CX860)
C215	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
					(CX860)
C216	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C217	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C218	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
					(CX860)
C219	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
					(CX860:AEP,UK)
C220	1-126-685-11	ELECT	47uF	20%	25V
					(CX870D)
C220	1-104-660-11	ELECT	47uF	20%	16V
					(CX860)
C221	1-126-964-11	ELECT	10uF	20%	50V
					(CX860:AEP,UK)
C222	1-104-664-11	ELECT	47uF	20%	16V
					(CX860)
C222	1-128-552-51	ELECT	47uF	20%	63V
					(CX870D)
C223	1-136-850-11	MYLAR	0.1uF	5%	63V
					(CX870D)
C225	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C226	1-104-664-11	ELECT	47uF	20%	16V
					(CX860)
C226	1-128-552-51	ELECT	47uF	20%	63V
					(CX870D)
C227	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C228	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C229	1-136-850-11	MYLAR	0.1uF	5%	63V
					(CX870D)
C230	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
					(CX860)
C231	1-128-202-11	ELECT	220uF	20%	63V
					(CX870D)
C232	1-128-196-91	ELECT	4.7uF	20%	63V
					(CX870D)
C232	1-126-960-11	ELECT	1uF	20%	50V
					(CX860)
C233	1-126-933-11	ELECT	100uF	20%	16V

Ref. No.	Part No.	Description			Remarks
C234	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C235	1-126-960-11	ELECT	1uF	20%	50V (CX860)
C235	1-124-733-91	ELECT	10uF	20%	63V (CX870D)
C236	1-136-850-11	MYLAR	0.1uF	5%	63V (CX870D)
C237	1-104-658-91	ELECT	100uF	20%	10V (CX860)
C237	1-128-552-51	ELECT	47uF	20%	63V (CX870D)
C238	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX860)
C239	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX860)
C240	1-163-015-91	CERAMIC CHIP	0.0033uF	10%	50V (CX870D)
C241	1-163-015-91	CERAMIC CHIP	0.0033uF	10%	50V (CX870D)
C244	1-104-658-11	ELECT	100uF	20%	10V (CX860)
C244	1-119-834-11	ELECT	22uF	20%	63V (CX870D)
C245	1-163-015-11	CERAMIC CHIP	0.0033uF	10%	50V (CX870D)
C246	1-163-015-11	CERAMIC CHIP	0.0033uF	10%	50V (CX870D)
C249	1-128-552-51	ELECT	47uF	20%	63V (CX870D)
C250	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX870D)
C251	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX870D)
C252	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX860:AEP,UK/CX870D)
C253	1-135-643-11	MYLAR	0.00022uF	5%	50V (CX870D)
C254	1-135-643-11	MYLAR	0.00022uF	5%	50V (CX870D)
C255	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX870D)
C256	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX870D)
C257	1-135-641-11	MYLAR	0.00015uF	5%	50V (CX870D)
C258	1-163-267-11	CERAMIC CHIP	470PF	5%	50V (CX870D)
C259	1-110-220-11	MYLAR	820PF	5%	50V (CX870D)
C260	1-164-686-11	CERAMIC CHIP	0.0015uF	5%	50V (CX870D)
C262	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V (CX860:AEP,UK/CX870D)
C263	1-110-220-11	MYLAR	820PF	5%	50V (CX870D)
C264	1-164-686-11	CERAMIC CHIP	0.0015uF	5%	50V (CX870D)
C265	1-110-221-11	MYLAR	0.001uF	5%	50V (CX870D)
C266	1-137-605-11	MYLAR	0.00022uF	5%	50V (CX870D)
C267	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX870D)
C268	1-163-267-11	CERAMIC CHIP	470PF	5%	50V (CX870D)
C269	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C270	1-135-643-11	MYLAR	0.00022uF	5%	50V (CX870D)
C271	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX870D)
C272	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX870D)
C273	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX870D)
C274	1-135-641-11	MYLAR	0.00015uF	5%	50V (CX870D)
C275	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX860:AEP,UK/CX870D)
C276	1-136-850-11	MYLAR	0.1uF	5%	63V (CX870D)
C277	1-126-965-11	ELECT	22uF	20%	50V (CX870D)
C278	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V (CX870D)
C279	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX860)
C280	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX860)
C282	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C283	1-126-965-11	ELECT	22uF	20%	50V (CX860)
C283	1-124-725-81	ELECT	100uF	20%	50V (CX870D)
C284	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C285	1-163-267-11	CERAMIC CHIP	470PF	5%	50V (CX860:AEP,UK)
C286	1-163-267-11	CERAMIC CHIP	470PF	5%	50V (CX860:AEP,UK)

< CONNECTOR >

Ref. No.	Part No.	Description
CN101	1-506-480-11	PIN, CONNECTOR 15P
CN102	1-794-790-11	CONNECTOR, BOARD TO BOARD 28P
CN103	1-785-696-11	CONNECTOR, FFC/FPC 15P (CX860:AEP,UK)
CN104	1-691-047-41	HOUSING, CONNECTOR 15P
CN201	1-794-790-11	CONNECTOR, BOARD TO BOARD 28P
CN202	1-580-857-11	CONNECTOR, BOARD TO BOARD 15P
CN203	1-580-857-11	CONNECTOR, BOARD TO BOARD 15P
* CN204	1-778-236-11	CONNECTOR, FFC/FPC 11P (CX860:AEP,UK)
CN301	1-785-697-11	CONNECTOR, FFC/FPC 18P
* CN302	1-568-938-11	PIN, CONNECTOR 11P
CN307	1-774-975-11	CONNECTOR, FFC/FPC 16P
CN308	1-815-171-11	CONNECTOR, FFC/FPC 23P

< DIODE >

Ref. No.	Part No.	Description
D102	8-719-914-45	DIODE DAP202K (CX860:AEP,UK)
D201	8-719-914-47	DIODE DAN202K (CX860:AEP,UK/CX870D)
D202	8-719-988-61	DIODE 1SS355TE-17 (CX860:AEP,UK)
D203	8-719-914-47	DIODE DAN202K (CX870D)
D205	8-719-072-27	DIODE MA2Z748001S0

Ref. No.	Part No.	Description	Remarks
D206	8-719-988-61	DIODE 1SS355TE-17	
D209	8-719-914-43	DIODE DAN202K	
D210	8-719-914-43	DIODE DAN202K	
		< TERMINAL >	
* ET101	1-537-738-21	TERMINAL, EARTH	
* ET201	1-537-738-21	TERMINAL, EARTH	
* ET202	1-537-738-21	TERMINAL, EARTH	
* ET301	1-537-738-21	TERMINAL, EARTH	
* ET302	1-537-738-21	TERMINAL, EARTH	
		< FERRITE BEAD >	
FB101	1-469-324-21	FERRITE 0UH	
FB102	1-469-324-21	FERRITE 0UH	
FB103	1-469-324-21	FERRITE 0UH	
FB104	1-469-324-21	FERRITE 0UH	
FB105	1-469-324-21	FERRITE 0UH	
FB106	1-469-324-21	FERRITE 0UH	
FB107	1-469-324-21	FERRITE 0UH	
FB108	1-469-324-21	FERRITE 0UH	
FB201	1-414-230-22	INDUCTOR 0UH	
FB202	1-414-230-22	INDUCTOR 0UH	
FB203	1-414-230-22	INDUCTOR 0UH	
FB204	1-414-230-22	INDUCTOR 0UH	
FB301	1-469-324-21	FERRITE 0UH	
FB302	1-469-324-21	FERRITE 0UH	
FB303	1-469-324-21	FERRITE 0UH	
FB304	1-469-324-21	FERRITE 0UH	
		< IC >	
IC101	8-759-667-18	IC PQ018EZ01ZP	
IC102	8-759-822-95	IC L79M05T-FA	
IC103	8-759-667-63	IC LA7109-TLM	
IC202	8-759-668-03	IC CXD9543Q	(CX870D)
IC203	8-759-667-85	IC CXD9545Q	(CX860)
IC204	8-759-669-29	IC CXD9544MR	
IC205	8-759-377-66	IC LC78817M	(CX860:AEP,UK)
IC206	8-759-667-19	IC IC UPC29M08T-E1	
IC207	8-759-052-52	IC L78M05T-FA	
IC208	8-759-684-22	IC IC BA15532F-E2	(CX870D)
IC209	8-759-425-23	IC BA4558F	(CX870D)
IC210	8-759-425-23	IC BA4558F	(CX860:AEP,UK)
IC210	8-759-684-22	IC IC BA15532F-E2	(CX870D)
		< JUMPER RESISTOR >	
JR001	1-216-296-91	SHORT 0	
JR002	1-216-296-91	SHORT 0	
JR003	1-216-296-91	SHORT 0	
JR004	1-216-296-91	SHORT 0	
JR005	1-216-295-11	SHORT 0	
JR006	1-216-296-91	SHORT 0	
JR007	1-216-295-11	SHORT 0	
JR008	1-216-295-11	SHORT 0	
JR009	1-216-296-91	SHORT 0	
JR010	1-216-296-91	SHORT 0	
JR011	1-216-295-11	SHORT 0	
JR012	1-216-296-91	SHORT 0	
JR013	1-216-296-91	SHORT 0	
JR014	1-216-296-91	SHORT 0	
JR015	1-216-295-11	SHORT 0	

Ref. No.	Part No.	Description	Remarks
JR016	1-216-295-11	SHORT 0	
JR017	1-216-295-11	SHORT 0	
JR018	1-216-296-91	SHORT 0	
JR019	1-216-295-11	SHORT 0	
JR020	1-216-295-11	SHORT 0	
JR021	1-216-295-11	SHORT 0	
JR022	1-216-296-91	SHORT 0	
JR024	1-216-296-91	SHORT 0	
JR025	1-216-295-11	SHORT 0	
JR026	1-216-295-11	SHORT 0	
JR027	1-216-295-11	SHORT 0	
JR029	1-216-296-91	SHORT 0	
JR030	1-216-296-91	SHORT 0	
JR031	1-216-295-11	SHORT 0	
JR032	1-216-296-91	SHORT 0	
JR033	1-216-296-91	SHORT 0	
JR034	1-216-295-11	SHORT 0	
JR035	1-216-295-11	SHORT 0	
JR044	1-216-296-91	SHORT 0	
		< COIL >	
L301	1-408-599-31	INDUCTOR 4.7uH	
		< IC LINK >	
⚠ PS001	1-533-593-11	LINK, IC (2.0A)	
		< TRANSISTOR >	
Q104	8-729-421-19	TRANSISTOR UN2213	
Q105	8-729-424-08	TRANSISTOR UN2111	
Q201	8-729-421-19	TRANSISTOR UN2213 (CX870D)	
Q202	8-729-027-53	TRANSISTOR DTC124TKA-T146 (CX860:AEP,UK/CX870D)	
Q203	8-729-424-02	TRANSISTOR 2SB709A-QR (CX860:AEP,UK/CX870D)	
Q204	8-729-230-72	TRANSISTOR 2SA1362YG	
Q205	8-729-421-19	TRANSISTOR UN2213	
Q206	8-729-027-53	TRANSISTOR DTC124TKA-T146	
Q207	8-729-216-22	TRANSISTOR 2SA1162-G	
Q208	8-729-424-18	TRANSISTOR UN2113-TX (CX860:AEP,UK/CX870D)	
Q209	8-729-027-53	TRANSISTOR DTC124TKA-T146 (CX860:AEP,UK/CX870D)	
Q210	8-729-424-02	TRANSISTOR 2SB709A-QR (CX860:AEP,UK/CX870D)	
		< RESISTOR >	
R104	1-216-295-11	SHORT 0	
R105	1-216-295-11	SHORT 0	
R106	1-216-295-11	SHORT 0	
R111	1-216-295-11	SHORT 0 (CX860:US,CND/CX870D)	
R112	1-216-073-00	METAL CHIP 10K 5% 1/10W (CX860:AEP,UK)	
R114	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R115	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R116	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R117	1-216-089-11	RES-CHIP 47K 5% 1/10W	
R119	1-216-089-11	RES-CHIP 47K 5% 1/10W	

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
R120	1-216-089-11	RES-CHIP	47K	5%	1/10W
R121	1-216-073-00	METAL CHIP	10K	5%	1/10W
R122	1-216-073-00	METAL CHIP	10K	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R125	1-216-295-11	SHORT	0		
R126	1-216-295-11	SHORT	0		
R127	1-216-295-11	SHORT	0		
R128	1-216-295-11	SHORT	0		
R129	1-216-295-11	SHORT	0		
R130	1-216-295-11	SHORT	0		
R131	1-216-021-00	METAL CHIP	68	5%	1/10W (CX860:AEP,UK)
R132	1-216-295-11	SHORT	0 (CX860:AEP,UK)		
R133	1-216-295-11	SHORT	0		
R142	1-216-295-11	SHORT	0		
R201	1-216-295-11	SHORT	0		
R202	1-216-295-11	SHORT	0		
R203	1-216-295-11	SHORT	0		
R204	1-216-295-11	SHORT	0		
R206	1-216-295-11	SHORT	0		
R207	1-216-295-11	SHORT	0		
R208	1-216-295-11	SHORT	0 (CX870D)		
R209	1-216-295-11	SHORT	0		
R211	1-216-295-11	SHORT	0		
R212	1-216-295-11	SHORT	0		
R213	1-216-295-11	SHORT	0		
R214	1-216-295-11	SHORT	0		
R216	1-216-295-11	SHORT	0		
R221	1-216-001-00	METAL CHIP	10	5%	1/10W (CX870D)
R223	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX870D)
R225	1-216-295-11	SHORT	0 (CX870D)		
R228	1-216-001-00	METAL CHIP	10	5%	1/10W (CX870D)
R230	1-216-025-11	RES-CHIP	100	5%	1/10W (CX870D)
R231	1-216-049-11	RES-CHIP	1K	5%	1/10W (CX870D)
R232	1-216-049-11	RES-CHIP	1K	5%	1/10W (CX870D)
R234	1-216-295-11	SHORT	0 (CX860)		
R235	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX870D)
R238	1-216-025-11	RES-CHIP	100	5%	1/10W
R239	1-216-033-00	METAL CHIP	220	5%	1/10W
R240	1-216-033-00	METAL CHIP	220	5%	1/10W
R241	1-216-295-11	SHORT	0		
R242	1-216-295-11	SHORT	0		
R243	1-216-295-11	SHORT	0		
R244	1-216-295-11	SHORT	0		
R246	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX860:AEP,UK/CX870D)
R249	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX860:AEP,UK/CX870D)

Ref. No.	Part No.	Description			Remarks
R250	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R251	1-216-033-00	METAL CHIP	220	5%	1/10W
R255	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R256	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R257	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R258	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R259	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R259	1-216-295-11	SHORT	0 (CX860:AEP,UK)		
R260	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R260	1-216-295-11	SHORT	0 (CX860:AEP,UK)		
R261	1-216-295-11	SHORT	0 (CX870D)		
R262	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX860:AEP,UK/CX870D)
R263	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R264	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R265	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R266	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R267	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R267	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX860:AEP,UK)
R268	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R268	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX860:AEP,UK)
R269	1-216-049-11	RES-CHIP	1K	5%	1/10W (CX870D)
R270	1-216-049-11	RES-CHIP	1K	5%	1/10W (CX870D)
R271	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX870D)
R272	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX870D)
R273	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX870D)
R274	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX870D)
R275	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R276	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R277	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX870D)
R278	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX870D)
R278	1-216-295-11	SHORT	0 (CX860:AEP,UK)		
R279	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R280	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX870D)
R281	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX860:AEP,UK/CX870D)
R282	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)

Ref. No.	Part No.	Description			Remarks
R283	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)
R284	1-216-295-11	SHORT	0 (CX860:AEP,UK/CX870D)		
R285	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)
R286	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)
R287	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)
R288	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)
R289	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)
R289	1-216-295-11	SHORT	0 (CX860:AEP,UK)		
R290	1-216-295-11	SHORT	0 (CX860:AEP,UK/CX870D)		
R291	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)
R292	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R293	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)
R294	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX870D)
R295	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)
R295	1-216-295-11	SHORT	0 (CX860:AEP,UK)		
R296	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX870D)
R296	1-216-295-11	SHORT	0 (CX860:AEP,UK)		
R297	1-216-073-00	METAL CHIP	10K	5%	1/10W
R298	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R299	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX870D)
R300	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX860:AEP,UK/CX870D)
R301	1-216-073-00	METAL CHIP	10K	5%	1/10W
R302	1-216-073-00	METAL CHIP	10K	5%	1/10W
R306	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX870D)
R307	1-216-295-11	SHORT	0 (CX860)		
R310	1-216-295-11	SHORT	0 (CX860:US,CND)		
R310	1-216-009-91	RES-CHIP	22	5%	1/10W (CX860:AEP,UK/CX870D)
R313	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R314	1-216-089-11	RES-CHIP	47K	5%	1/10W
R315	1-216-065-91	RES-CHIP	4.7K	5%	1/10W (CX860:AEP,UK/CX870D)
R316	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX860:AEP,UK/CX870D)
R317	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX860:AEP,UK/CX870D)
R318	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX860:AEP,UK/CX870D)
R319	1-216-041-00	METAL CHIP	470	5%	1/10W (CX860:AEP,UK/CX870D)
R320	1-216-295-11	SHORT	0		
R322	1-216-295-11	SHORT	0		

Ref. No.	Part No.	Description			Remarks
*	A-6065-602-A	CH-98 BOARD, COMPLETE (CX860:AEP,UK)			
		**********			
*	A-6065-613-A	CH-98 BOARD, COMPLETE (CX860:US,CND)			
		**********			
*	A-6065-626-A	CH-98 BOARD, COMPLETE (CX870D)			
		**********			
					(Ref.No.;1000Series)
		< CAPACITOR >			
C402	1-163-135-00	CERAMIC CHIP	560PF	5%	50V (CX860)
C403	1-163-135-00	CERAMIC CHIP	560PF	5%	50V (CX860)
C404	1-126-964-11	ELECT	10uF	20%	50V (CX860)
C405	1-128-200-11	ELECT	47uF	20%	63V (CX870D)
C406	1-137-256-11	MYLAR	0.00015uF	5%	50V (CX870D)
C407	1-137-256-11	MYLAR	0.00015uF	5%	50V (CX870D)
C408	1-136-850-11	MYLAR	0.1uF	5%	63V (CX870D)
C409	1-128-200-11	ELECT	47uF	20%	63V (CX870D)
C409	1-126-935-11	ELECT	470uF	20%	6.3V (CX860)
C410	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX860)
C411	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX860)
C412	1-125-854-11	FILM	560PF	5%	50V (CX870D)
C414	1-125-854-11	FILM	560PF	5%	50V (CX870D)
C415	1-137-256-11	MYLAR	0.00015uF	5%	50V (CX870D)
C416	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX860)
C417	1-137-256-11	MYLAR	0.00015uF	5%	50V (CX870D)
C418	1-128-846-11	ELECT	330uF	20%	10V (CX870D)
C419	1-126-964-11	ELECT	10uF	20%	50V (CX860)
C419	1-128-200-11	ELECT	47uF	20%	63V (CX870D)
C420	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX860)
C421	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C422	1-137-619-21	FILM	1200PF	5%	50V (CX870D)
C423	1-137-619-21	FILM	1200PF	5%	50V (CX870D)
C425	1-130-467-00	MYLAR	470PF	5%	50V (CX870D)
C426	1-130-467-00	MYLAR	470PF	5%	50V (CX870D)

CH-98

Ref. No.	Part No.	Description			Remarks
C428	1-136-850-11	MYLAR	0.1uF	5%	63V (CX870D)
C429	1-128-552-11	ELECT	47uF	20%	50V (CX870D)
C430	1-104-664-11	ELECT	47uF	20%	16V (CX860)
C431	1-104-664-11	ELECT	47uF	20%	16V (CX860)
C432	1-128-552-11	ELECT	47uF	20%	50V (CX870D)
C433	1-136-850-11	MYLAR	0.1uF	5%	63V (CX870D)
C434	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C435	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C436	1-126-933-11	ELECT	100uF	20%	16V (CX860)
C436	1-126-052-11	ELECT	100uF	20%	16V (CX870D)
C437	1-126-933-11	ELECT	100uF	20%	16V (CX860)
C437	1-126-052-11	ELECT	100uF	20%	16V (CX870D)
C438	1-124-724-11	ELECT	47uF	20%	16V (CX870D)
C439	1-136-850-11	MYLAR	0.1uF	5%	63V (CX870D)
C440	1-124-724-11	ELECT	47uF	20%	16V (CX870D)
C441	1-136-850-11	MYLAR	0.1uF	5%	63V (CX870D)
C442	1-126-965-11	ELECT	22uF	20%	50V (CX870D)
C443	1-126-965-11	ELECT	22uF	20%	50V (CX870D)
C444	1-124-724-11	ELECT	47uF	20%	16V (CX870D)
C444	1-126-965-11	ELECT	22uF	20%	50V (CX860:AEP,UK)
C445	1-126-965-11	ELECT	22uF	20%	50V (CX870D)
C446	1-136-850-11	MYLAR	0.1uF	5%	63V (CX870D)
C447	1-136-850-11	MYLAR	0.1uF	5%	63V (CX870D)
C448	1-104-987-11	MYLAR	0.001uF	5%	50V (CX870D)
C449	1-104-987-11	MYLAR	0.001uF	5%	50V (CX870D)
C450	1-163-259-91	CERAMIC CHIP	220PF	5%	50V (CX870D)
C451	1-130-477-00	MYLAR	0.0033uF	5%	50V (CX860)
C451	1-106-351-00	MYLAR	2200PF	5%	200V (CX870D)
C452	1-137-605-11	MYLAR	0.00022uF	5%	50V (CX870D)
C453	1-130-477-00	MYLAR	0.0033uF	5%	50V (CX860)
C453	1-106-351-00	MYLAR	2200PF	5%	200V (CX870D)
C454	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V (CX870D)
C455	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V (CX870D)
C456	1-104-987-11	MYLAR	0.001uF	5%	50V (CX870D)
C457	1-104-987-11	MYLAR	0.001uF	5%	50V (CX870D)
C458	1-163-251-11	CERAMIC CHIP	100PF	5%	50V (CX860:US,CND/CX870D)
C461	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C462	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C464	1-163-251-11	CERAMIC CHIP	100PF	5%	50V (CX860:US,CND/CX870D)
C466	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C468	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C472	1-163-259-91	CERAMIC CHIP	220PF	5%	50V (CX860:AEP,UK)
C473	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C474	1-104-664-11	ELECT	47uF	20%	16V
C475	1-104-664-11	ELECT	47uF	20%	16V
C476	1-104-664-11	ELECT	47uF	20%	16V
C477	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C478	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
		< CONNECTOR >			
CN401	1-506-494-11	PIN, CONNECTOR 15P			
CN402	1-506-494-11	PIN, CONNECTOR 15P			
		< DIODE >			
D401	8-719-988-61	DIODE 1SS355TE-17			
D402	8-719-988-61	DIODE 1SS355TE-17 (CX870D)			
		< FERRITE BEAD >			
FB401	1-414-553-11	FERRITE	0UH		
FB402	1-414-553-11	FERRITE	0UH		
FB403	1-414-553-11	FERRITE	0UH		(CX860:US,CND/CX870D)
FB404	1-414-553-11	FERRITE	0UH		(CX860:US,CND/CX870D)
FB405	1-414-553-11	FERRITE	0UH		
FB406	1-414-553-11	FERRITE	0UH		
FB407	1-414-553-11	FERRITE	0UH (CX870D)		
FB408	1-414-553-11	FERRITE	0UH		(CX860:AEP,UK/CX870D)
FB409	1-414-553-11	FERRITE	0UH (CX870D)		
FB410	1-414-553-11	FERRITE	0UH (CX870D)		
FB411	1-414-553-11	FERRITE	0UH (CX870D)		
FB412	1-414-553-11	FERRITE	0UH (CX870D)		
		< IC >			
IC401	8-759-425-23	IC BA4558F-E2 (OPTICAL)			(CX860)
IC401	8-759-684-22	IC IC BA15532F-E2			(CX870D)
IC402	8-749-017-31	IC IC GP1FA550TZ			(CX860)
IC402	8-749-017-80	IC IC GP1FA551TZ			(CX870D)
IC403	8-759-587-83	IC OPA2134UA/2K5			(CX870D)

Ref. No.	Part No.	Description			Remarks
		< JACK >			
J401	1-793-446-21	JACK, PIN 1P (COAXIAL)(CX860)			
J401	1-784-432-11	JACK, PIN 1P (COAXIAL)(CX870D)			
J402	1-793-484-11	JACK, PIN 2P (AUDIO IN)(CX860)			
J402	1-794-794-11	JACK, PIN 2P (AUDIO IN)(CX870D)			
J403	1-793-484-11	JACK, PIN 2P (AUDIO OUT)(CX860:AEP,UK)			
J404	1-794-793-11	JACK, PIN 4P (AUDIO OUT)(CX860:US,CND)			
J404	1-793-524-11	JACK, PIN 4P (AUDIO OUT)(CX870D)			
J405	1-794-792-11	JACK, PIN 6P (5.1CH OUTPUT)(CX870D)			
J406	1-793-446-11	JACK, PIN 1P (WOOFER OUT) (CX860:AEP,UK)			
		< JUMPER RESISTOR >			
JR401	1-216-296-91	SHORT	0		
JR402	1-216-295-11	SHORT	0		
JR442	1-216-295-11	SHORT	0		
		< TRANSISTOR >			
Q401	8-729-230-49	TRANSISTOR	2SC2712-YG (CX870D)		
Q402	8-729-230-49	TRANSISTOR	2SC2712-YG		
Q403	8-729-230-47	TRANSISTOR	2SA1162-YG.TE85L		(CX870D)
Q404	8-729-422-26	TRANSISTOR	2SD601A-QRS-TX		
Q405	8-729-422-26	TRANSISTOR	2SD601A-QRS-TX		(CX870D)
Q406	8-729-046-97	TRANSISTOR	2SD1938(F)-T(TX).SO		
Q407	8-729-046-97	TRANSISTOR	2SD1938(F)-T(TX).SO		
Q408	8-729-046-97	TRANSISTOR	2SD1938(F)-T(TX).SO		(CX870D)
Q409	8-729-046-97	TRANSISTOR	2SD1938(F)-T(TX).SO		(CX860:AEP,UK/CX870D)
Q410	8-729-046-97	TRANSISTOR	2SD1938(F)-T(TX).SO		(CX870D)
Q411	8-729-046-97	TRANSISTOR	2SD1938(F)-T(TX).SO		(CX870D)
Q412	8-729-046-97	TRANSISTOR	2SD1938(F)-T(TX).SO		(CX870D)
Q413	8-729-046-97	TRANSISTOR	2SD1938(F)-T(TX).SO		(CX870D)
Q414	8-729-046-97	TRANSISTOR	2SD1938(F)-T(TX).SO		(CX870D)
Q415	8-729-046-97	TRANSISTOR	2SD1938(F)-T(TX).SO		(CX870D)
		< RESISTOR >			
R401	1-208-460-11	METAL CHIP	8.2K	0.5%	1/10W
R402	1-208-460-11	METAL CHIP	8.2K	0.5%	1/10W
R403	1-208-460-11	METAL CHIP	8.2K	0.5%	1/10W
R404	1-208-460-11	METAL CHIP	8.2K	0.5%	1/10W
R405	1-216-049-11	RES-CHIP	1K	5%	1/10W
R406	1-208-806-11	RES-CHIP	10K	2%	1/10W
R407	1-208-806-11	RES-CHIP	10K	2%	1/10W
R408	1-216-049-11	RES-CHIP	1K	5%	1/10W (CX860)
R409	1-216-049-11	RES-CHIP	1K	5%	1/10W
R410	1-216-081-00	METAL CHIP	22K	5%	1/10W (CX870D)
R411	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX870D)
R412	1-216-049-11	RES-CHIP	1K	5%	1/10W (CX870D)
R413	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R414	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R415	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R416	1-216-025-11	RES-CHIP	100	5%	1/10W
R417	1-216-295-11	SHORT	0		
R418	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R419	1-208-806-11	RES-CHIP	10K	2%	1/10W
R420	1-208-806-11	RES-CHIP	10K	2%	1/10W
R421	1-216-021-00	METAL CHIP	68	5%	1/10W
R422	1-216-021-00	METAL CHIP	68	5%	1/10W (CX870D)
R423	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)
R424	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)
R425	1-216-033-00	METAL CHIP	220	5%	1/10W (CX860)
R426	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)
R427	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)
R428	1-216-295-11	SHORT	0 (CX870D)		
R431	1-216-295-11	SHORT	0 (CX870D)		
R432	1-216-049-11	RES-CHIP	1K	5%	1/10W
R433	1-216-049-11	RES-CHIP	1K	5%	1/10W (CX870D)
R434	1-216-041-00	METAL CHIP	470	5%	1/10W
R435	1-216-041-00	METAL CHIP	470	5%	1/10W
R436	1-216-089-11	RES-CHIP	47K	5%	1/10W
R437	1-216-089-11	RES-CHIP	47K	5%	1/10W
R438	1-216-089-11	RES-CHIP	47K	5%	1/10W
R439	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX870D)
R443	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX870D)
R444	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R445	1-216-065-91	RES-CHIP	4.7K	5%	1/10W (CX860:US,CND)
R446	1-216-065-91	RES-CHIP	4.7K	5%	1/10W (CX860:AEP,UK/CX870D)
R447	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX860:AEP,UK/CX870D)
R448	1-216-097-11	RES-CHIP	100K	5%	1/10W
R449	1-216-097-11	RES-CHIP	100K	5%	1/10W (CX860:AEP,UK/CX870D)
R450	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX870D)
R451	1-216-097-11	RES-CHIP	100K	5%	1/10W (CX870D)
R452	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX870D)
R453	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX870D)
R454	1-216-097-11	RES-CHIP	100K	5%	1/10W (CX860:AEP,UK/CX870D)
R455	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX870D)
R456	1-216-041-00	METAL CHIP	470	5%	1/10W (CX870D)
R457	1-216-041-00	METAL CHIP	470	5%	1/10W (CX860:AEP,UK/CX870D)
R458	1-216-041-00	METAL CHIP	470	5%	1/10W (CX870D)
R459	1-216-105-91	RES-CHIP	220K	5%	1/10W
R460	1-216-041-00	METAL CHIP	470	5%	1/10W (CX870D)

Ref. No.	Part No.	Description			Remarks
R461	1-216-041-00	METAL CHIP	470	5%	1/10W (CX870D)
R462	1-216-105-91	RES-CHIP	220K	5%	1/10W
R463	1-216-041-00	METAL CHIP	470	5%	1/10W (CX860:US,CND/CX870D)
R464	1-216-041-00	METAL CHIP	470	5%	1/10W
R465	1-216-041-00	METAL CHIP	470	5%	1/10W (CX860:US,CND/CX870D)
R466	1-216-041-00	METAL CHIP	470	5%	1/10W
R467	1-216-041-00	METAL CHIP	470	5%	1/10W (CX870D)
R469	1-216-295-11	SHORT	0 (CX860:AEP,UK)		
R470	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX870D)
R471	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX870D)
R472	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX870D)
R473	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX870D)
R474	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX860:AEP,UK/CX870D)
R475	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX870D)
R487	1-216-041-00	METAL CHIP	470	5%	1/10W
R488	1-216-041-00	METAL CHIP	470	5%	1/10W
R489	1-216-041-00	METAL CHIP	470	5%	1/10W (CX870D)
R490	1-216-041-00	METAL CHIP	470	5%	1/10W (CX870D)
R495	1-216-295-11	SHORT	0		
		< RELAY >			
RY401	1-755-184-11	RELAY			
RY402	1-755-184-11	RELAY (CX870D)			
*	A-6065-604-A	CK-97 BOARD, COMPLETE (CX860:AEP,UK)			
		**********			
*	A-6065-615-A	CK-97 BOARD, COMPLETE (CX860:US,CND)			
		**********			
*	A-6065-628-A	CK-97 BOARD, COMPLETE (CX870D)			
		**********			
					(Ref.No.;2000Series)
	3-064-172-01	HOLDER(CK-97), SENSOR			
	3-960-273-11	SPACER, TOP END			
		< CAPACITOR >			
C001	1-128-551-11	ELECT	22uF	20%	25V
C002	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C003	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C004	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C005	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C006	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C007	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C008	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C009	1-128-551-11	ELECT	22uF	20%	25V
C010	1-126-964-11	ELECT	10uF	20%	50V
C011	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C012	1-126-964-11	ELECT	10uF	20%	50V
C013	1-128-551-11	ELECT	22uF	20%	25V
C014	1-126-964-11	ELECT	10uF	20%	50V

Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >	
CN001	1-691-863-11	CONNECTOR, BOARD TO BOARD	
CN002	1-573-538-11	CONNECTOR, BOARD TO BOARD 8P	
* CN003	1-778-236-11	CONNECTOR, FFC/FPC 11P	
CN004	1-770-674-11	CONNECTOR, FFC/FPC 16P	
CN005	1-793-491-11	CONNECTOR, FFC/FPC 17P	
		< DIODE >	
D001	8-719-069-54	DIODE UDZS-TE17-5.1B	
D003	8-719-056-85	DIODE UDZ-TE-17-8.2B	
D004	8-719-069-54	DIODE UDZS-TE17-5.1B	
D005	8-719-048-26	DIODE GL528V1	
		< IC >	
IC001	8-759-277-68	IC LB1648	
IC002	8-759-277-68	IC LB1648	
IC003	8-759-691-05	IC BU4069UBF-E2	
		< JUMPER RESISTOR >	
JR001	1-216-296-91	SHORT 0	
JR002	1-216-296-91	SHORT 0	
JR003	1-216-296-91	SHORT 0	
JR004	1-216-296-91	SHORT 0	
JR005	1-216-296-91	SHORT 0	
JR006	1-216-296-91	SHORT 0	
JR007	1-216-296-91	SHORT 0	
JR008	1-216-296-91	SHORT 0	
JR009	1-216-296-91	SHORT 0	
JR010	1-216-296-91	SHORT 0	
JR011	1-216-296-91	SHORT 0	
JR012	1-216-296-91	SHORT 0	
JR013	1-216-296-91	SHORT 0	
JR015	1-216-296-91	SHORT 0	
JR016	1-216-296-91	SHORT 0	
JR017	1-216-296-91	SHORT 0	
JR018	1-216-296-91	SHORT 0	
JR019	1-216-296-91	SHORT 0	
JR020	1-216-296-91	SHORT 0	
JR021	1-216-296-91	SHORT 0	
JR022	1-216-296-91	SHORT 0	
JR023	1-216-296-91	SHORT 0	
JR024	1-216-296-91	SHORT 0	
JR025	1-216-296-91	SHORT 0	
JR026	1-216-296-91	SHORT 0	
JR027	1-216-296-91	SHORT 0	
JR028	1-216-296-91	SHORT 0	
JR029	1-216-296-91	SHORT 0	
JR030	1-216-296-91	SHORT 0	
JR031	1-216-296-91	SHORT 0	
JR032	1-216-296-91	SHORT 0	
JR034	1-216-296-91	SHORT 0	
JR035	1-216-296-91	SHORT 0	
JR036	1-216-296-91	SHORT 0	
JR037	1-216-296-91	SHORT 0	
JR038	1-216-296-91	SHORT 0	
JR039	1-216-296-91	SHORT 0	
JR042	1-216-296-91	SHORT 0	
JR043	1-216-296-91	SHORT 0	
JR044	1-216-296-91	SHORT 0	

Ref. No.	Part No.	Description		Remarks
JR045	1-216-296-91	SHORT	0	
JR046	1-216-296-91	SHORT	0	
JR047	1-216-296-91	SHORT	0	
JR048	1-216-296-91	SHORT	0	
JR049	1-216-296-91	SHORT	0	
JR050	1-216-296-91	SHORT	0	
JR053	1-216-296-91	SHORT	0	
JR054	1-216-296-91	SHORT	0	
JR055	1-216-296-91	SHORT	0	
JR056	1-216-296-91	SHORT	0	
JR057	1-216-296-91	SHORT	0	
JR058	1-216-296-91	SHORT	0	
JR059	1-216-296-91	SHORT	0	
JR060	1-216-296-91	SHORT	0	
JR061	1-216-296-91	SHORT	0	
JR062	1-216-296-91	SHORT	0	
JR064	1-216-296-91	SHORT	0	
JR065	1-216-296-91	SHORT	0	
JR066	1-216-296-91	SHORT	0	
JR067	1-216-296-91	SHORT	0	
JR070	1-216-296-91	SHORT	0	
JR071	1-216-296-91	SHORT	0	
JR074	1-216-296-91	SHORT	0	
JR076	1-216-296-91	SHORT	0	
JR079	1-216-296-91	SHORT	0	
JR080	1-216-296-91	SHORT	0	
JR081	1-216-296-91	SHORT	0	
JR083	1-216-296-91	SHORT	0	
JR086	1-216-296-91	SHORT	0	
JR087	1-216-296-91	SHORT	0	
JR088	1-216-296-91	SHORT	0	
JR089	1-216-296-91	SHORT	0	
JR090	1-216-296-91	SHORT	0	
JR091	1-216-296-91	SHORT	0	
JR092	1-216-296-91	SHORT	0	
JR095	1-216-296-91	SHORT	0	
JR096	1-216-296-91	SHORT	0	
JR097	1-216-296-91	SHORT	0	
JR100	1-216-296-91	SHORT	0	
JR101	1-216-296-91	SHORT	0	
JR110	1-216-296-91	SHORT	0	
JR111	1-216-296-91	SHORT	0	
JR112	1-216-296-91	SHORT	0	
JR113	1-216-296-91	SHORT	0	
JR114	1-216-296-91	SHORT	0	
JR116	1-216-296-91	SHORT	0	
JR117	1-216-296-91	SHORT	0	
		< PHOTO INTERRUPTER >		
PH001	8-719-052-69	DIODE RPI-352		
		< TRANSISTOR >		
Q001	8-729-043-84	TRANSISTOR	PT380F3	
Q002	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q003	8-729-424-59	TRANSISTOR	UN2212	
Q004	8-729-424-59	TRANSISTOR	UN2212	
Q005	8-729-424-59	TRANSISTOR	UN2212	
Q006	8-729-026-49	TRANSISTOR	2SA1037AK-T146-R	
Q007	8-729-026-49	TRANSISTOR	2SA1037AK-T146-R	
Q008	8-729-026-49	TRANSISTOR	2SA1037AK-T146-R	
		< RESISTOR >		
R005	1-216-095-00	METAL CHIP	82K 5% 1/10W	
R006	1-216-095-00	METAL CHIP	82K 5% 1/10W	
R009	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	
R013	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	
R015	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	
R021	1-216-039-00	METAL CHIP	390 5% 1/10W	
R022	1-216-091-00	METAL CHIP	56K 5% 1/10W	
R023	1-216-093-91	RES-CHIP	68K 5% 1/10W	
R024	1-216-121-11	RES-CHIP	1M 5% 1/10W	
R025	1-216-093-91	RES-CHIP	68K 5% 1/10W	
R026	1-216-121-11	RES-CHIP	1M 5% 1/10W	
R027	1-216-093-91	RES-CHIP	68K 5% 1/10W	
R028	1-216-121-11	RES-CHIP	1M 5% 1/10W	
R030	1-216-049-11	RES-CHIP	1K 5% 1/10W	
R031	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	
R032	1-216-041-00	METAL CHIP	470 5% 1/10W	
R033	1-216-073-00	METAL CHIP	10K 5% 1/10W	
R034	1-216-099-00	METAL CHIP	120K 5% 1/10W	
R035	1-216-031-00	METAL CHIP	180 5% 1/10W	
R037	1-216-093-91	RES-CHIP	68K 5% 1/10W	
R040	1-216-047-91	RES-CHIP	820 5% 1/10W	
R041	1-216-043-91	RES-CHIP	560 5% 1/10W	(CX860)
R041	1-216-037-00	METAL CHIP	330 5% 1/10W	(CX870D)
R042	1-216-039-00	METAL CHIP	390 5% 1/10W	(CX860)
R042	1-216-045-00	METAL CHIP	680 5% 1/10W	(CX870D)
R043	1-216-043-91	RES-CHIP	560 5% 1/10W	(CX860)
R043	1-216-037-00	METAL CHIP	330 5% 1/10W	(CX870D)
R044	1-216-039-00	METAL CHIP	390 5% 1/10W	(CX860)
R044	1-216-045-00	METAL CHIP	680 5% 1/10W	(CX870D)
R045	1-216-089-11	RES-CHIP	47K 5% 1/10W	
R046	1-216-089-11	RES-CHIP	47K 5% 1/10W	
R047	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	
R048	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	
R049	1-216-035-00	METAL CHIP	270 5% 1/10W	
R050	1-216-041-00	METAL CHIP	470 5% 1/10W	
R051	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	
R052	1-216-152-11	RES-CHIP	12 5% 1/8W	
R053	1-216-152-11	RES-CHIP	12 5% 1/8W	
R054	1-216-152-11	RES-CHIP	12 5% 1/8W	
R055	1-216-152-11	RES-CHIP	12 5% 1/8W	
R056	1-216-049-11	RES-CHIP	1K 5% 1/10W	
R057	1-216-049-11	RES-CHIP	1K 5% 1/10W	
R058	1-216-043-91	RES-CHIP	560 5% 1/10W	
R059	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	

Ref. No.	Part No.	Description			Remarks
		CS-57 BOARD, COMPLETE			
		**********			
					(Ref.No.;1000Series)
		< CONNECTOR >			
CN261	1-794-833-11	CONNECTOR, FFC/FPC 5P			
CN262	1-573-835-11	CONNECTOR, BOARD TO BOARD 3P			
		< PHOTO INTERRUPTER >			
PH261	8-749-014-69	IC SPI-238-18			
PH262	8-749-014-69	IC SPI-238-18			
		< RESISTOR >			
R261	1-216-039-00	METAL CHIP	390	5%	1/10W
R262	1-216-039-00	METAL CHIP	390	5%	1/10W
*	A-6065-603-A	CV-34 BOARD, COMPLETE (CX860:AEP,UK)			
		**********			
*	A-6065-614-A	CV-34 BOARD, COMPLETE (CX860:US,CND)			
		**********			
*	A-6065-627-A	CV-34 BOARD, COMPLETE (CX870D)			
		**********			
					(Ref.No.;1000Series)
		< CAPACITOR >			
C501	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C502	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
					(CX860:US,CND/CX870D)
		< CONNECTOR >			
CN501	1-691-047-41	HOUSING, CONNECTOR 15P			
		< DIODE >			
D503	8-719-988-61	DIODE 1SS355TE-17			
		< FERRITE BEAD >			
FB501	1-414-553-11	FERRITE	0UH		
FB502	1-414-553-11	FERRITE	0UH		
					(CX860:US,CND/CX870D)
FB503	1-414-553-11	FERRITE	0UH		
FB504	1-414-553-11	FERRITE	0UH		
FB505	1-414-553-11	FERRITE	0UH		
		< JACK >			
J501	1-694-484-21	TERMINAL, S (2P.V) (SVIDEO OUTPUT)			
					(CX860:US,CND)
J501	1-794-198-11	CONNECTOR, S TERMINAL (SVIDEO OUTPUT)			
					(CX860:AEP,UK)
J501	1-694-484-11	TERMINAL, S (2P.V) (SVIDEO OUTPUT)			
					(CX870D)
J502	1-793-445-11	JACK, PIN 3P (CONPONENT OUTPUT)(CX860)			
J502	1-793-445-21	JACK, PIN 3P (CONPONENT OUTPUT)(CX870D)			
J503	1-764-188-21	JACK (SMALL TYPE) (DIA. 3.5)			
					(MEGA CONTROL)
J504	1-764-188-21	JACK (SMALL TYPE) (DIA. 3.5) (S-LINK)			
					(CX860:US,CND/CX870D)
J505	1-793-475-21	JACK, PIN 2P (VIDEO OUTPUT)			
					(CX860:US,CND)
J505	1-785-867-31	JACK, PIN 1P (VIDEO OUTPUT)(CX860:AEP,UK)			
J505	1-793-475-11	JACK, PIN 2P (VIDEO OUTPUT)(CX870D)			

Ref. No.	Part No.	Description			Remarks
		< COIL >			
L501	1-414-930-21	INDUCTOR	2.2uH		
		< TRANSISTOR >			
Q501	8-729-046-97	TRANSISTOR	2SD1938(F)-T(TX).SO		
		< RESISTOR >			
R501	1-216-021-00	METAL CHIP	68	5%	1/10W
					(CX860:US,CND/CX870D)
R502	1-216-021-00	METAL CHIP	68	5%	1/10W
R503	1-216-021-00	METAL CHIP	68	5%	1/10W
					(CX860:US,CND/CX870D)
R504	1-216-021-00	METAL CHIP	68	5%	1/10W
R505	1-216-021-00	METAL CHIP	68	5%	1/10W
					(CX860:US,CND/CX870D)
R506	1-216-021-00	METAL CHIP	68	5%	1/10W
R507	1-216-021-00	METAL CHIP	68	5%	1/10W
R508	1-216-021-00	METAL CHIP	68	5%	1/10W
R509	1-216-021-00	METAL CHIP	68	5%	1/10W
R510	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R512	1-216-073-00	METAL CHIP	10K	5%	1/10W
R513	1-216-001-00	METAL CHIP	10	5%	1/10W
R514	1-216-295-11	SHORT	0 (CX860:US,CND/CX870D)		
R515	1-216-295-11	SHORT	0		
R516	1-216-295-11	SHORT	0 (CX860:US,CND/CX870D)		
R517	1-216-295-11	SHORT	0		
R518	1-216-295-11	SHORT	0		
R519	1-216-295-11	SHORT	0 (CX860:US,CND/CX870D)		
R523	1-216-295-11	SHORT	0 (CX860:US,CND/CX870D)		
R524	1-216-049-11	RES-CHIP	1K	5%	1/10W
					(CX860:US,CND/CX870D)
R525	1-216-295-11	SHORT	0		
R526	1-216-295-11	SHORT	0		
		DA-29 BOARD, COMPLETE			
		**********			
					(Ref.No.;1000Series)
		< CONNECTOR >			
CN161	1-794-832-21	CONNECTOR, FFC/FPC 4P			
		< PHOTO INTERRUPTER >			
PH161	8-749-015-76	PHOTO INTERRUPTER SPI-235-19-S1			
PH162	8-749-015-76	PHOTO INTERRUPTER SPI-235-19-S1			
		< RESISTOR >			
R161	1-216-043-91	RES-CHIP	560	5%	1/10W
R162	1-216-043-91	RES-CHIP	560	5%	1/10W
		DM-96 BOARD, COMPLETE			
		**********			
					(Ref.No.;1000Series)
		< CAPACITOR >			
C191	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C192	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V

Ref. No.	Part No.	Description			Remarks
		< CONNECTOR >			
CN191	1-794-784-21	CONNECTOR, FFC/FPC 6P			
* CN192	1-779-072-11	CONNECTOR, FFC/FPC 4P			
		< JUMPER RESISTOR >			
JR190	1-216-296-91	SHORT	0		
*	A-6065-607-A	ER-12 BOARD, COMPLETE (CX860:AEP,UK) ********** (Ref.No.;1000Series)			
		< CAPACITOR >			
C902	1-163-021-91	CERAMIC CHIP	0.01uF	10% 50V	
C906	1-163-021-91	CERAMIC CHIP	0.01uF	10% 50V	
C907	1-126-204-11	ELECT CHIP	47uF	20% 16V	
C908	1-126-395-11	ELECT	22uF	20% 16V	
C909	1-126-395-11	ELECT	22uF	20% 16V	
C910	1-126-395-11	ELECT	22uF	20% 16V	
C911	1-163-021-91	CERAMIC CHIP	0.01uF	10% 50V	
C912	1-126-395-11	ELECT	22uF	20% 16V	
C913	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C914	1-164-489-11	CERAMIC CHIP	0.22uF	10% 16V	
C920	1-163-021-91	CERAMIC CHIP	0.01uF	10% 50V	
C921	1-126-395-11	ELECT	22uF	20% 16V	
C922	1-126-395-11	ELECT	22uF	20% 16V	
C923	1-163-021-91	CERAMIC CHIP	0.01uF	10% 50V	
C924	1-128-390-11	ELECT CHIP	220uF	20% 6.3V	
C925	1-128-390-11	ELECT CHIP	220uF	20% 6.3V	
C927	1-163-021-91	CERAMIC CHIP	0.01uF	10% 50V	
C938	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C939	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C940	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C941	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C942	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C943	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C944	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C945	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C950	1-163-251-11	CERAMIC CHIP	100PF	5% 50V	
C951	1-163-251-11	CERAMIC CHIP	100PF	5% 50V	
C962	1-163-251-11	CERAMIC CHIP	100PF	5% 50V	
C963	1-163-251-11	CERAMIC CHIP	100PF	5% 50V	
C972	1-163-021-91	CERAMIC CHIP	0.01uF	10% 50V	
		< CONNECTOR >			
CN901	1-794-236-11	CONNECTOR, FFC/FPC 15P			
CN902	1-794-235-11	CONNECTOR, FFC/FPC 11P			
		< JACK >			
CNJ901	1-251-780-11	SOCKET, PIN (21P) (LINE-2)			
CNJ902	1-251-780-11	SOCKET, PIN (21P) (LINE-1(RGB)-TV)			
		< DIODE >			
D901	8-719-988-61	DIODE 1SS355TE-17			
D902	8-719-988-61	DIODE 1SS355TE-17			
D903	8-719-988-61	DIODE 1SS355TE-17			
D904	8-719-988-61	DIODE 1SS355TE-17			
D905	8-719-988-61	DIODE 1SS355TE-17			
D906	8-719-988-61	DIODE 1SS355TE-17			
D907	8-719-988-61	DIODE 1SS355TE-17			
D908	8-719-071-15	DIODE HZM6.8ZWA1TL			
D909	8-719-988-61	DIODE 1SS355TE-17			
D910	8-719-988-61	DIODE 1SS355TE-17			
D911	8-719-988-61	DIODE 1SS355TE-17			
D915	8-719-071-15	DIODE HZM6.8ZWA1TL			
D917	8-719-071-15	DIODE HZM6.8ZWA1TL			
D918	8-719-071-15	DIODE HZM6.8ZWA1TL			
D919	8-719-071-15	DIODE HZM6.8ZWA1TL			
D920	8-719-071-15	DIODE HZM6.8ZWA1TL			
D921	8-719-071-15	DIODE HZM6.8ZWA1TL			
D922	8-719-071-15	DIODE HZM6.8ZWA1TL			
D923	8-719-071-15	DIODE HZM6.8ZWA1TL			
D924	8-719-071-15	DIODE HZM6.8ZWA1TL			
D926	8-719-056-82	DIODE UDZ-TE-17-6.2B			
D927	8-719-977-40	DIODE DTZ13B			
D929	8-719-056-82	DIODE UDZ-TE-17-6.2B			
D930	8-719-977-40	DIODE DTZ13B			
D931	8-719-071-15	DIODE HZM6.8ZWA1TL			
		< FERRITE BEAD >			
FB901	1-414-553-11	FERRITE	0UH		
FB902	1-414-553-11	FERRITE	0UH		
FB903	1-414-553-11	FERRITE	0UH		
FB904	1-414-553-11	FERRITE	0UH		
FB905	1-414-553-11	FERRITE	0UH		
FB906	1-414-553-11	FERRITE	0UH		
FB907	1-414-553-11	FERRITE	0UH		
FB908	1-414-553-11	FERRITE	0UH		
FB909	1-414-553-11	FERRITE	0UH		
FB910	1-414-553-11	FERRITE	0UH		
FB911	1-414-553-11	FERRITE	0UH		
FB912	1-414-553-11	FERRITE	0UH		
FB913	1-414-553-11	FERRITE	0UH		
FB914	1-414-553-11	FERRITE	0UH		
FB915	1-414-553-11	FERRITE	0UH		
FB916	1-414-553-11	FERRITE	0UH		
FB917	1-414-553-11	FERRITE	0UH		
FB918	1-414-553-11	FERRITE	0UH		
		< IC >			
IC901	8-759-663-94	IC LA7106M-TLM			
IC902	8-759-446-66	IC MM1113XFBE			
IC903	8-759-567-33	IC MM1225XFBE			
		< COIL >			
L904	1-412-064-11	INDUCTOR	100uH		
		< TRANSISTOR >			
Q901	8-729-421-19	TRANSISTOR	UN2213		
Q902	8-729-422-27	TRANSISTOR	2SD601A-Q		
Q903	8-729-424-08	TRANSISTOR	UN2111		
Q906	8-729-421-19	TRANSISTOR	UN2213		
Q907	8-729-424-08	TRANSISTOR	UN2111		
Q908	8-729-421-22	TRANSISTOR	UN2211		
Q909	8-729-421-19	TRANSISTOR	UN2213		
Q910	8-729-424-08	TRANSISTOR	UN2111		
Q911	8-729-421-19	TRANSISTOR	UN2213		
Q912	8-729-422-27	TRANSISTOR	2SD601A-Q		

Ref. No.	Part No.	Description			Remarks
Q913	8-729-422-27	TRANSISTOR	2SD601A-Q		
Q914	8-729-422-27	TRANSISTOR	2SD601A-Q		
Q915	8-729-422-27	TRANSISTOR	2SD601A-Q		
Q916	8-729-422-27	TRANSISTOR	2SD601A-Q		
Q917	8-729-421-19	TRANSISTOR	UN2213		
Q918	8-729-422-27	TRANSISTOR	2SD601A-Q		
		< RESISTOR >			
R902	1-216-089-11	RES-CHIP	47K	5%	1/10W
R904	1-216-089-11	RES-CHIP	47K	5%	1/10W
R906	1-216-089-11	RES-CHIP	47K	5%	1/10W
R907	1-216-089-11	RES-CHIP	47K	5%	1/10W
R908	1-216-105-91	RES-CHIP	220K	5%	1/10W
R909	1-216-037-00	METAL CHIP	330	5%	1/10W
R910	1-216-037-00	METAL CHIP	330	5%	1/10W
R911	1-216-037-00	METAL CHIP	330	5%	1/10W
R912	1-216-037-00	METAL CHIP	330	5%	1/10W
R914	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R915	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R916	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R917	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R918	1-216-021-00	METAL CHIP	68	5%	1/10W
R920	1-216-049-11	RES-CHIP	1K	5%	1/10W
R921	1-216-073-00	METAL CHIP	10K	5%	1/10W
R922	1-216-021-00	METAL CHIP	68	5%	1/10W
R923	1-216-041-00	METAL CHIP	470	5%	1/10W
R924	1-216-041-00	METAL CHIP	470	5%	1/10W
R925	1-216-041-00	METAL CHIP	470	5%	1/10W
R926	1-216-041-00	METAL CHIP	470	5%	1/10W
R927	1-216-021-00	METAL CHIP	68	5%	1/10W
R928	1-216-021-00	METAL CHIP	68	5%	1/10W
R929	1-216-021-00	METAL CHIP	68	5%	1/10W
R930	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R931	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R932	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R933	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R934	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R938	1-216-025-11	RES-CHIP	100	5%	1/10W
R939	1-216-017-91	RES-CHIP	47	5%	1/10W
R940	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R944	1-216-073-00	METAL CHIP	10K	5%	1/10W
R950	1-216-081-00	METAL CHIP	22K	5%	1/10W
R951	1-216-081-00	METAL CHIP	22K	5%	1/10W
		< RELAY >			
RY901	1-755-184-11	RELAY			
RY902	1-755-184-11	RELAY			
RY903	1-755-184-11	RELAY			
RY904	1-755-184-11	RELAY			
RY905	1-755-184-11	RELAY			
RY906	1-755-184-11	RELAY			
*	A-6065-608-A	FL-115 BOARD, COMPLETE			
		**********			
					(Ref.No.;2000Series)
		< CAPACITOR >			
C401	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C402	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V

Ref. No.	Part No.	Description			Remarks
		< CONNECTOR >			
CN403	1-794-785-11	CONNECTOR, FFC/FPC 15P			
CN404	1-785-730-21	CONNECTOR, FFC/FPC 9P			
CN405	1-794-786-11	CONNECTOR, FFC/FPC 3P			
		< DIODE >			
D401	8-719-081-68	DIODE SLI-343DCT32			
D402	8-719-081-68	DIODE SLI-343DCT32			
D403	8-719-081-68	DIODE SLI-343DCT32			
D404	8-719-056-06	DIODE SLR-342DC3F			
D405	8-719-056-07	DIODE SLR-342MC3F			
D406	8-719-056-06	DIODE SLR-342DC3F			
		< JUMPER RESISTOR >			
JR401	1-216-296-91	SHORT	0		
JR451	1-216-296-91	SHORT	0		
JR452	1-216-296-91	SHORT	0		
JR455	1-216-296-91	SHORT	0		
JR457	1-216-296-91	SHORT	0		
JR459	1-216-296-91	SHORT	0		
JR465	1-216-296-91	SHORT	0		
		< RESISTOR >			
R401	1-216-044-00	METAL CHIP	620	5%	1/10W
R402	1-216-044-00	METAL CHIP	620	5%	1/10W
R403	1-216-044-00	METAL CHIP	620	5%	1/10W
R404	1-216-037-00	METAL CHIP	330	5%	1/10W
R405	1-216-037-00	METAL CHIP	330	5%	1/10W
R406	1-216-040-00	RES-CHIP	430	5%	1/10W
R407	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R408	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R409	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R410	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R411	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R412	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R413	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R414	1-216-077-91	RES-CHIP	15K	5%	1/10W
R415	1-216-091-00	METAL CHIP	56K	5%	1/10W
R416	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R417	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R418	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R419	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R420	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R421	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R422	1-216-077-91	RES-CHIP	15K	5%	1/10W
R423	1-216-091-00	METAL CHIP	56K	5%	1/10W
R424	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R425	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R426	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R427	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R428	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R429	1-216-077-91	RES-CHIP	15K	5%	1/10W
		< SWITCH >			
S401	1-475-235-21	ENCODER, ROTARY (PREV/NEXT)			
S403	1-771-349-21	SWITCH, KEYBOARD (STOP)			
S404	1-771-349-21	SWITCH, KEYBOARD (PAUSE)			
S405	1-771-349-21	SWITCH, KEYBOARD (JOG)			
S406	1-771-349-21	SWITCH, KEYBOARD (LOAD)			

Ref. No.	Part No.	Description	Remarks
S407	1-771-349-21	SWITCH, KEYBOARD (REPEAT)	
S408	1-771-349-21	SWITCH, KEYBOARD (TIME/TEXT)	
S409	1-771-349-21	SWITCH, KEYBOARD (SHUFFLE)	
S410	1-771-349-21	SWITCH, KEYBOARD (1/ALL DISCS)	
S411	1-771-349-21	SWITCH, KEYBOARD (TITLE)	
S412	1-771-349-21	SWITCH, KEYBOARD (DISPLAY)	
S413	1-771-349-21	SWITCH, KEYBOARD (DVD MENU)	
S414	1-771-349-21	SWITCH, KEYBOARD (RETURN)	
S415	1-771-349-21	SWITCH, KEYBOARD (OPEN/CLOSE)	
S416	1-771-349-21	SWITCH, KEYBOARD (PLAY)	
S417	1-771-349-21	SWITCH, KEYBOARD (MEGA CONTROL)	
S418	1-771-349-21	SWITCH, KEYBOARD (EASY PLAY)	
S419	1-771-349-21	SWITCH, KEYBOARD (TURN OVER)	
S420	1-771-349-21	SWITCH, KEYBOARD (DISC CHANGE)	
S421	1-771-349-21	SWITCH, KEYBOARD (DIRECT SEARCH)	
*	A-6065-599-A	FR-173 BOARD, COMPLETE (CX860:AEP,UK)	
		**********	
*	A-6065-610-A	FR-173 BOARD, COMPLETE (CX860:US,CND)	
		**********	
*	A-6065-623-A	FR-173 BOARD, COMPLETE (CX870D)	
		**********	
		(Ref.No.;4000Series)	
	3-064-174-01	HOLDER, INDICATION TUBE	
		< BUZZER >	
BZ101	1-504-920-11	BUZZER	
		< CAPACITOR >	
C101	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C102	1-126-395-11	ELECT 22uF 20% 16V	
C103	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C104	1-126-395-11	ELECT 22uF 20% 16V	
C105	1-128-405-11	ELECT CHIP 22uF 20% 50V	
C106	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C107	1-137-150-11	FILM 0.01uF 5% 100V	
C108	1-126-204-11	ELECT CHIP 47uF 20% 16V	
C109	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C110	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C111	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
		(CX860:US,CND/CX870D)	
C112	1-115-339-11	CERAMIC CHIP 0.1uF 10% 50V	
C113	1-115-339-11	CERAMIC CHIP 0.1uF 10% 50V	
C114	1-137-672-21	ELECT(BLOCK) 47uF 20% 50V	
C116	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
		(CX860:US,CND/CX870D)	
C117	1-128-405-11	ELECT CHIP 22uF 20% 50V	
C118	1-115-339-11	CERAMIC CHIP 0.1uF 10% 50V	
C119	1-115-339-11	CERAMIC CHIP 0.1uF 10% 50V	
C120	1-115-339-11	CERAMIC CHIP 0.1uF 10% 50V	
C121	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C122	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C123	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C125	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C134	1-163-259-91	CERAMIC CHIP 220PF 5% 50V	
C135	1-163-259-91	CERAMIC CHIP 220PF 5% 50V	

Ref. No.	Part No.	Description	Remarks
C139	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C140	1-163-259-91	CERAMIC CHIP 220PF 5% 50V	
C141	1-115-339-11	CERAMIC CHIP 0.1uF 10% 50V	
C142	1-163-259-91	CERAMIC CHIP 220PF 5% 50V	
C143	1-163-259-91	CERAMIC CHIP 220PF 5% 50V	
		< CONNECTOR >	
CN101	1-794-236-11	CONNECTOR, FFC/FPC 15P	
CN102	1-794-835-21	CONNECTOR, FFC/FPC	
CN103	1-794-836-11	PIN, CONNECTOR 2P	(CX870D)
		< DIODE >	
D101	8-719-056-06	DIODE SLR-342DC3F	
D102	8-719-056-06	DIODE SLR-342DC3F	
D104	8-719-041-97	DIODE MA113-TX	
D105	8-719-041-97	DIODE MA113-TX	
D107	8-719-914-47	DIODE DAN202K	(CX860:US,CND/CX870D)
D108	8-719-018-12	DIODE MA8330	
D109	8-719-422-67	DIODE MA8062-H	
D111	8-719-067-59	DIODE MAZ9120D0LS0-TX/L	
D112	8-719-067-59	DIODE MAZ9120D0LS0-TX/L	
D113	8-719-067-59	DIODE MAZ9120D0LS0-TX/L	
D116	8-719-067-82	DIODE SML-020MLTT86	
		< FERRITE BEAD >	
FB101	1-414-553-11	FERRITE 0UH	
FB102	1-414-553-11	FERRITE 0UH	
FB103	1-469-324-21	FERRITE 0UH	
		< IC >	
IC101	8-749-011-22	IC GP1U27X (R)	
IC102	8-759-525-43	IC TC74HCT08AF(EL)	
IC103	8-759-366-45	IC NJU3713G(TE2)	
IC104	8-759-144-73	IC uPC393G2-E2 (CX860:US,CND/CX870D)	
IC105	8-759-326-78	IC PST9140NL	
IC106	8-759-695-71	IC M38B57M6-159FP	
IC107	8-759-593-18	IC M35501FP-T2	
		< JACK >	
J101	1-573-034-11	CONNECTOR,MULTIPLE (SMALL TYPE)	
		(KEY BOARD)	
		< COIL >	
L101	1-412-533-21	INDUCTOR 47uH	
		< FLUORESCENT INDICATOR >	
ND101	1-517-834-21	INDICATOR TUBE, FLUORESCENT	
		< TRANSISTOR >	
Q101	8-729-808-01	TRANSISTOR 2SD1622-S	
Q102	8-729-808-01	TRANSISTOR 2SD1622-S	
Q103	8-729-903-46	TRANSISTOR 2SB1132-P	
Q104	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q105	8-729-804-41	TRANSISTOR 2SB1122-S	

FR-173

Ref. No.	Part No.	Description			Remarks
Q106	8-729-424-02	TRANSISTOR	2SB709A-QR		
			(CX860:US,CND/CX870D)		
Q107	8-729-424-18	TRANSISTOR	UN2113-TX		
			(CX860:US,CND/CX870D)		
Q108	8-729-421-22	TRANSISTOR	UN2211		
Q110	8-729-808-01	TRANSISTOR	2SD1622-S		
Q112	1-801-806-11	TRANSISTOR	DTC144EKA-T146		
Q113	1-801-806-11	TRANSISTOR	DTC144EKA-T146		
		< RESISTOR >			
R102	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R103	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R104	1-216-029-00	METAL CHIP	150	5%	1/10W
					(CX870D)
R105	1-216-025-11	RES-CHIP	100	5%	1/10W
R106	1-216-089-11	RES-CHIP	47K	5%	1/10W
R107	1-216-037-00	METAL CHIP	330	5%	1/10W
R109	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R110	1-216-073-00	METAL CHIP	10K	5%	1/10W
R112	1-216-037-00	METAL CHIP	330	5%	1/10W
R113	1-216-025-11	RES-CHIP	100	5%	1/10W
R114	1-216-025-11	RES-CHIP	100	5%	1/10W
R115	1-216-073-00	METAL CHIP	10K	5%	1/10W
R116	1-216-081-00	METAL CHIP	22K	5%	1/10W
			(CX860:US,CND/CX870D)		
R117	1-216-081-00	METAL CHIP	22K	5%	1/10W
			(CX860:US,CND/CX870D)		
R118	1-216-073-00	METAL CHIP	10K	5%	1/10W
			(CX860:US,CND/CX870D)		
R119	1-216-049-11	RES-CHIP	1K	5%	1/10W
			(CX860:US,CND/CX870D)		
R120	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R123	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
			(CX860:US,CND/CX870D)		
R124	1-216-073-00	METAL CHIP	10K	5%	1/10W
R125	1-216-025-11	RES-CHIP	100	5%	1/10W
R126	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R127	1-216-073-00	METAL CHIP	10K	5%	1/10W
R128	1-216-025-11	RES-CHIP	100	5%	1/10W
R129	1-216-025-11	RES-CHIP	100	5%	1/10W
R130	1-216-049-11	RES-CHIP	1K	5%	1/10W
R131	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R134	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R135	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W
R137	1-216-073-00	METAL CHIP	10K	5%	1/10W
R138	1-216-073-00	METAL CHIP	10K	5%	1/10W
R139	1-216-073-00	METAL CHIP	10K	5%	1/10W
R141	1-216-073-00	METAL CHIP	10K	5%	1/10W
R143	1-216-295-11	SHORT	0		
R144	1-216-295-11	SHORT	0		
R145	1-216-295-11	SHORT	0		
R146	1-216-295-11	SHORT	0		
R148	1-216-025-11	RES-CHIP	100	5%	1/10W
R149	1-216-097-11	RES-CHIP	100K	5%	1/10W
R150	1-216-065-91	RES-CHIP	4.7K	5%	1/10W

Ref. No.	Part No.	Description			Remarks
R151	1-216-025-11	RES-CHIP	100	5%	1/10W
R154	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R155	1-216-295-11	SHORT	0		
R156	1-216-025-11	RES-CHIP	100	5%	1/10W
R157	1-216-025-11	RES-CHIP	100	5%	1/10W
R158	1-216-025-11	RES-CHIP	100	5%	1/10W
R159	1-216-025-11	RES-CHIP	100	5%	1/10W
R160	1-216-073-00	METAL CHIP	10K	5%	1/10W
R161	1-216-073-00	METAL CHIP	10K	5%	1/10W
R162	1-216-025-11	RES-CHIP	100	5%	1/10W
R165	1-216-097-11	RES-CHIP	100K	5%	1/10W
R166	1-216-073-00	METAL CHIP	10K	5%	1/10W
R167	1-216-073-00	METAL CHIP	10K	5%	1/10W
R169	1-216-073-00	METAL CHIP	10K	5%	1/10W
R170	1-216-031-00	METAL CHIP	180	5%	1/10W
R171	1-216-049-11	RES-CHIP	1K	5%	1/10W
					(CX870D)
R173	1-216-049-11	RES-CHIP	1K	5%	1/10W
R176	1-216-093-91	RES-CHIP	68K	5%	1/10W
R177	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R178	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R179	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R180	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R181	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R182	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R183	1-216-077-91	RES-CHIP	15K	5%	1/10W
R184	1-216-091-00	METAL CHIP	56K	5%	1/10W
R185	1-216-093-91	RES-CHIP	68K	5%	1/10W
R186	1-216-093-91	RES-CHIP	68K	5%	1/10W
R187	1-216-093-91	RES-CHIP	68K	5%	1/10W
R188	1-216-093-91	RES-CHIP	68K	5%	1/10W
R189	1-216-093-91	RES-CHIP	68K	5%	1/10W
R190	1-216-093-91	RES-CHIP	68K	5%	1/10W
R191	1-216-093-91	RES-CHIP	68K	5%	1/10W
R192	1-216-093-91	RES-CHIP	68K	5%	1/10W
R193	1-216-093-91	RES-CHIP	68K	5%	1/10W
R194	1-216-093-91	RES-CHIP	68K	5%	1/10W
R195	1-216-093-91	RES-CHIP	68K	5%	1/10W
R196	1-216-093-91	RES-CHIP	68K	5%	1/10W
R197	1-216-025-11	RES-CHIP	100	5%	1/10W
R198	1-216-025-11	RES-CHIP	100	5%	1/10W
R199	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R200	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R201	1-216-295-11	SHORT	0		
R209	1-216-081-00	METAL CHIP	22K	5%	1/10W
R210	1-216-037-00	METAL CHIP	330	5%	1/10W
R211	1-216-033-00	METAL CHIP	220	5%	1/10W
		< SWITCH >			
S101	1-771-349-21	SWITCH, KEYBOARD (VIRTUAL3D SURROUND)			
S102	1-771-349-21	SWITCH, KEYBOARD (DVE)			
S103	1-771-349-21	SWITCH, KEYBOARD (FOLDER A)			
S104	1-771-349-21	SWITCH, KEYBOARD (FOLDER B)			
S105	1-771-349-21	SWITCH, KEYBOARD (FOLDER C)			
S106	1-771-349-21	SWITCH, KEYBOARD (FOLDER D)			
S107	1-771-349-21	SWITCH, KEYBOARD (FOLDER ALL)			
S108	1-771-349-21	SWITCH, KEYBOARD (FOLDER DVD)			
S109	1-771-349-21	SWITCH, KEYBOARD (FOLDER CD)			

Ref. No.	Part No.	Description			Remarks
		< TRANSFORMER >			
T101	1-433-840-11	TRANSFORMER, DC-DC CONVERTER			
		< THERMISTOR >			
TH001	1-533-817-21	THERMISTOR			
		< VIBRATOR >			
X101	1-577-358-21	VIBRATOR, CERAMIC (4MHz)			
		LC-70 BOARD, COMPLETE			
		**********			
					(Ref.No.;1000Series)
		< CAPACITOR >			
C201	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C202	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C203	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C204	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
		< CONNECTOR >			
CN201	1-564-014-11	PIN, CONNECTOR 4P			
		LE-30 BOARD, COMPLETE (CX870D)			
		**********			
					(Ref.No.;2000Series)
		< CONNECTOR >			
CN301	1-794-837-11	PIN, CONNECTOR (PC BOARD) 2P			
		< DIODE >			
D301	8-719-076-64	DIODE LNG997CKB0S0 (DOLBY)			
	A-6065-616-A	LS-55 BOARD, COMPLETE			
		**********			
					(Ref.No.;1000Series)
		< CONNECTOR >			
CN221	1-506-487-11	PIN, CONNECTOR 8P			
CN222	1-573-835-11	CONNECTOR, BOARD TO BOARD 3P			
CN223	1-794-833-11	CONNECTOR, FFC/FPC 5P			
		< JUMPER RESISTOR >			
JR221	1-216-296-91	SHORT	0		
JR222	1-216-296-91	SHORT	0		
		< PHOTO INTERRUPTER >			
PH221	8-749-014-69	IC SPI-238-18			
PH222	8-749-014-69	IC SPI-238-18			
		< RESISTOR >			
R221	1-216-039-00	METAL CHIP	390	5%	1/10W
R222	1-216-039-00	METAL CHIP	390	5%	1/10W

Ref. No.	Part No.	Description			Remarks
		LT-37 BOARD, COMPLETE			
		**********			
					(Ref.No.;1000Series)
		< CONNECTOR >			
CN281	1-573-817-11	CONNECTOR, BOARD TO BOARD 3P			
		< DIODE >			
D281	8-719-081-87	DIODE SLA-360MT3F (CX860)			
D281	8-719-076-64	DIODE LNG997CKB0S0 (CX870D)			
D282	8-719-069-59	DIODE UDZS-TE17-8.2B (CX870D)			
		LT-38 BOARD, COMPLETE			
		**********			
					(Ref.No.;1000Series)
		< CONNECTOR >			
CN241	1-573-817-11	CONNECTOR, BOARD TO BOARD 3P			
		< DIODE >			
D241	8-719-081-87	DIODE SLA-360MT3F			(CX860)
D241	8-719-076-64	DIODE LNG997CKB0S0			(CX870D)
D242	8-719-056-85	DIODE UDZ-TE-17-8.2B			(CX870D)
*	A-6065-600-A	MB-94 BOARD, COMPLETE (CX860:AEP,UK)			
		**********			
*	A-6065-611-A	MB-94 BOARD, COMPLETE (CX860:US,CND)			
		**********			
*	A-6065-624-A	MB-94 BOARD, COMPLETE (CX870D)			
		**********			
					(Ref.No.;10000Series)
		< CAPACITOR >			
C101	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C102	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C103	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C104	1-126-209-11	ELECT CHIP	100uF	20%	4V
C105	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C106	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C107	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C108	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C109	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C110	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C111	1-126-209-11	ELECT CHIP	100uF	20%	4V (CX860:US,CND)
C112	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C113	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C114	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C115	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C116	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C117	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C118	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C119	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C120	1-126-206-11	ELECT CHIP	100uF	20%	6.3V (CX860:AEP,UK/CX870D)

MB-94

Ref. No.	Part No.	Description			Remarks
C121	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
			(CX860:AEP,UK/CX870D)		
C122	1-126-209-11	ELECT CHIP	100uF	20%	4V
			(CX860:AEP,UK/CX870D)		
C301	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C302	1-126-209-11	ELECT CHIP	100uF	20%	4V
C303	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C304	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C305	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C306	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C307	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C308	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C309	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C310	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C312	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C313	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C314	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C315	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C316	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C317	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C318	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C319	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C320	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C321	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C322	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C324	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C325	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C326	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C327	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C328	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C329	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C330	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C331	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C332	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C401	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C402	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C403	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C405	1-126-204-11	ELECT CHIP	47uF	20%	16V
C409	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C410	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C411	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C412	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C413	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C414	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C415	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C416	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C417	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C418	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C419	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C420	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C422	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C424	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C425	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C426	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C427	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C428	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C429	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V

Ref. No.	Part No.	Description			Remarks
C430	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C431	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C433	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C434	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C435	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C436	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C437	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C438	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C439	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C440	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C441	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C442	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C443	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C444	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C445	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C446	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C447	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C448	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C449	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C450	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C451	1-126-204-11	ELECT CHIP	47uF	20%	16V
C452	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C453	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C454	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C455	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C456	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C457	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C458	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C459	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C460	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C462	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C463	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C465	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C501	1-124-779-00	ELECT CHIP	10uF	20%	16V
C502	1-124-779-00	ELECT CHIP	10uF	20%	16V
C503	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C504	1-124-779-00	ELECT CHIP	10uF	20%	16V
C505	1-125-822-11	TANTALUM	10uF	20%	10V
C506	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C507	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C508	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C509	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C510	1-124-779-00	ELECT CHIP	10uF	20%	16V
C511	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C512	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C513	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C514	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C515	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C516	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C517	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C518	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C519	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C520	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C521	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C522	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C523	1-125-822-11	TANTALUM	10uF	20%	10V
C524	1-126-204-11	ELECT CHIP	47uF	20%	16V
C525	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C528	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C529	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description			Remarks
C530	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C531	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C532	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C533	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C534	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C535	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C536	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C537	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C538	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C539	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C540	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C541	1-124-779-00	ELECT CHIP	10uF	20%	16V
C542	1-126-193-11	ELECT	1uF	20%	50V
C601	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C602	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C603	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C604	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C701	1-126-209-11	ELECT CHIP	100uF	20%	4V
C702	1-126-209-11	ELECT CHIP	100uF	20%	4V
C703	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C704	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C705	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C706	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C707	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C708	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C709	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C710	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C711	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C712	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C713	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C714	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C715	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C716	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C717	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C718	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description			Remarks
C719	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (CX870D)
C720	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (CX870D)
C721	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (CX870D)
C722	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (CX870D)
C723	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (CX870D)
C801	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C802	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C803	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C804	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C805	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C806	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C807	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C808	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C809	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
* CN102	1-764-250-11	PIN, CONNECTOR (PC BOARD) 4P			
CN402	1-779-993-11	PIN, CONNECTOR (PWB) 5P			
CN404	1-794-425-11	CONNECTOR, FCC/FPC 20P			
CN405	1-794-424-11	CONNECTOR, FCC/FPC 16P			
CN502	1-794-352-21	CONNECTOR, BOARD TO BOARD 28P			
CN702	1-794-352-21	CONNECTOR, BOARD TO BOARD 28P			
CN801	1-779-936-11	CONNECTOR, FFC/FPC 18P			
CN802	1-770-700-11	CONNECTOR, FFC/FPC 17P			
		< DIODE >			
D101	8-719-071-34	DIODE RB521S-30-TE61			
		< FERRITE BEAD >			
FB102	1-414-226-21	INDUCTOR	0UH		
FB103	1-414-226-21	INDUCTOR	0UH (CX870D)		
FB104	1-414-226-21	INDUCTOR	0UH		
FB105	1-414-226-21	INDUCTOR	0UH		
FB106	1-414-226-21	INDUCTOR	0UH (CX870D)		
FB107	1-414-226-21	INDUCTOR	0UH		
FB109	1-414-226-21	INDUCTOR	0UH		
FB110	1-414-226-21	INDUCTOR	0UH		
FB111	1-414-226-21	INDUCTOR	0UH		
FB112	1-414-226-21	INDUCTOR	0UH		
FB501	1-469-324-21	FERRITE	0UH		
FB502	1-469-324-21	FERRITE	0UH		
FB503	1-469-324-21	FERRITE	0UH		
FB504	1-469-324-21	FERRITE	0UH		
FB505	1-469-324-21	FERRITE	0UH		
FB506	1-469-324-21	FERRITE	0UH		
FB507	1-469-324-21	FERRITE	0UH		
FB509	1-414-226-21	INDUCTOR	0UH (CX870D)		
FB701	1-414-226-21	INDUCTOR	0UH (CX870D)		
FB702	1-414-226-21	INDUCTOR	0UH (CX870D)		
FB810	1-469-787-11	FERRITE	0UH		
FB814	1-469-787-11	FERRITE	0UH		
FB815	1-469-787-11	FERRITE	0UH		
FB816	1-469-787-11	FERRITE	0UH		
FB817	1-469-787-11	FERRITE	0UH		

MB-94

Ref. No.	Part No.	Description	Remarks
FB818	1-469-787-11	FERRITE 0UH	
FB819	1-469-787-11	FERRITE 0UH	
FB820	1-469-787-11	FERRITE 0UH	
FB821	1-469-787-11	FERRITE 0UH	
FB822	1-469-787-11	FERRITE 0UH	
FB823	1-469-787-11	FERRITE 0UH	
FB824	1-469-787-11	FERRITE 0UH	
FB825	1-469-787-11	FERRITE 0UH	
FB828	1-469-787-11	FERRITE 0UH	
FB829	1-469-787-11	FERRITE 0UH	
FB830	1-469-787-11	FERRITE 0UH	
FB831	1-469-787-11	FERRITE 0UH	
FB832	1-469-787-11	FERRITE 0UH	
		< FILTER >	
FL101	1-234-177-21	FILTER, CHIP EMI	
FL102	1-234-177-21	FILTER, CHIP EMI	
FL103	1-234-177-21	FILTER, CHIP EMI	(CX860:US,CND)
FL104	1-234-177-21	FILTER, CHIP EMI	(CX860:AEP,UK/CX870D)
FL301	1-234-177-21	FILTER, CHIP EMI	
FL302	1-234-177-21	FILTER, CHIP EMI	
FL303	1-234-177-21	FILTER, CHIP EMI	
FL402	1-234-177-21	FILTER, CHIP EMI	
FL404	1-234-177-21	FILTER, CHIP EMI	
FL405	1-234-177-21	FILTER, CHIP EMI	
FL501	1-234-177-21	FILTER, CHIP EMI	
FL502	1-234-177-21	FILTER, CHIP EMI	
FL503	1-234-177-21	FILTER, CHIP EMI	
FL504	1-234-177-21	FILTER, CHIP EMI	
FL505	1-234-177-21	FILTER, CHIP EMI	
FL506	1-234-177-21	FILTER, CHIP EMI	
FL507	1-233-893-21	FILTER, CHIP EMI	
FL508	1-234-177-21	FILTER, CHIP EMI	
FL601	1-234-177-21	FILTER, CHIP EMI	(CX870D)
FL701	1-234-177-21	FILTER, CHIP EMI	(CX870D)
FL702	1-234-177-21	FILTER, CHIP EMI	(CX870D)
FL801	1-234-177-21	FILTER, CHIP EMI	
		< IC >	
IC101	8-759-668-01	IC BR9040F-D-E2	
IC102	8-759-693-12	IC MB91108PFV-G-BND	
IC103	8-759-427-92	IC PST9126NL	
IC104	Note	IC MBM29DL-324BD-90PFTN	
IC105	8-759-690-68	IC SM8703BV-E2	
IC107	8-759-486-55	IC NJM2370U33-TE2	(CX860:AEP,UK/CX870D)
IC301	8-759-486-55	IC NJM2370U33-TE2	
IC302	8-759-666-84	IC CXD9576R	
IC303	8-759-643-10	IC GM71V18160CT-6TR	
IC401	8-759-660-88	IC LA6553-TE-L	
IC402	8-759-660-88	IC LA6553-TE-L	
IC403	8-759-338-78	IC BA10324AFV-E2	
IC404	8-759-660-87	IC CXD9569R	
IC502	8-752-399-55	IC CXD1932Q	
IC503	8-759-486-55	IC NJM2370U33-TE2	
IC504	8-759-573-19	IC MSM56V16160D-10TS-K	
IC505	8-759-573-19	IC MSM56V16160D-10TS-K	
IC506	8-759-669-28	IC IC PQ1R18	
IC601	8-759-663-93	IC CXD9549R (CX870D)	
IC701	8-752-402-09	IC CXD1939R (CX870D)	

Ref. No.	Part No.	Description	Remarks
IC802	8-759-693-11	IC K9F6408U0A-TCB0T	
IC803	8-759-670-51	IC CXD9568R-TBM	
		< RESISTOR >	
R002	1-216-801-11	METAL CHIP 22 5% 1/16W	
R009	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R014	1-216-805-11	METAL CHIP 47 5% 1/16W	
R015	1-216-809-11	METAL CHIP 100 5% 1/16W	
R016	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R017	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R019	1-216-817-11	METAL CHIP 470 5% 1/16W	
R101	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R102	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R103	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R104	1-216-801-11	METAL CHIP 22 5% 1/16W	
R105	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R108	1-216-864-11	METAL CHIP 0 5% 1/16W	
R111	1-216-864-11	METAL CHIP 0 5% 1/16W	(CX860:AEP,UK/CX870D)
R112	1-216-864-11	METAL CHIP 0 5% 1/16W	
R113	1-216-797-11	METAL CHIP 10 5% 1/16W	
R114	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R115	1-216-864-11	METAL CHIP 0 5% 1/16W	(CX860:AEP,UK/CX870D)
R118	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R120	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R121	1-216-864-11	METAL CHIP 0 5% 1/16W	
R123	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R124	1-216-834-11	METAL CHIP 12K 5% 1/16W	(CX860:AEP,UK)
R125	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R126	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	(CX860)
R126	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	(CX870D)
R127	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R128	1-216-841-11	METAL CHIP 47K 5% 1/16W	(CX860:AEP,UK)
R129	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R130	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R131	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R132	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R133	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R136	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R138	1-216-797-11	METAL CHIP 10 5% 1/16W	
R139	1-216-797-11	METAL CHIP 10 5% 1/16W	
R140	1-216-797-11	METAL CHIP 10 5% 1/16W	
R154	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R158	1-216-797-11	METAL CHIP 10 5% 1/16W	
R159	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R161	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R164	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R166	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R167	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R168	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R169	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R170	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R171	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R172	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R173	1-216-833-11	METAL CHIP 10K 5% 1/16W	

Note : Part No. will be informed later.

Ref. No.	Part No.	Description			Remarks
R174	1-216-833-11	METAL CHIP	10K	5%	1/16W
R175	1-216-833-11	METAL CHIP	10K	5%	1/16W
R176	1-216-833-11	METAL CHIP	10K	5%	1/16W
R184	1-216-801-11	METAL CHIP	22	5%	1/16W
R186	1-216-864-11	METAL CHIP	0	5%	1/16W
R187	1-216-833-11	METAL CHIP	10K	5%	1/16W
R188	1-216-833-11	METAL CHIP	10K	5%	1/16W
R195	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R301	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R302	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R303	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R304	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R305	1-216-838-11	METAL CHIP	27K	5%	1/16W
R306	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R307	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R309	1-216-809-11	METAL CHIP	100	5%	1/16W
R310	1-216-833-11	METAL CHIP	10K	5%	1/16W
R311	1-216-845-11	METAL CHIP	100K	5%	1/16W
R313	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W
R314	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R315	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R316	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R317	1-216-833-11	METAL CHIP	10K	5%	1/16W
R318	1-216-833-11	METAL CHIP	10K	5%	1/16W
R319	1-218-853-11	METAL CHIP	1.8K	0.5%	1/16W
R320	1-216-833-11	METAL CHIP	10K	5%	1/16W
R321	1-216-813-11	METAL CHIP	220	5%	1/16W
R327	1-216-809-11	METAL CHIP	100	5%	1/16W
R338	1-216-801-11	METAL CHIP	22	5%	1/16W
R402	1-216-797-11	METAL CHIP	10	5%	1/16W
R403	1-216-797-11	METAL CHIP	10	5%	1/16W
R404	1-216-797-11	METAL CHIP	10	5%	1/16W
R405	1-216-797-11	METAL CHIP	10	5%	1/16W
R406	1-216-797-11	METAL CHIP	10	5%	1/16W
R408	1-216-795-11	RES-CHIP	6.8	5%	1/16W
R409	1-216-797-11	METAL CHIP	10	5%	1/16W
R411	1-216-835-11	METAL CHIP	15K	5%	1/16W
R412	1-216-797-11	METAL CHIP	10	5%	1/16W
R415	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R416	1-216-844-11	METAL CHIP	82K	5%	1/16W
R417	1-216-843-11	METAL CHIP	68K	5%	1/16W
R418	1-216-844-11	METAL CHIP	82K	5%	1/16W
R419	1-216-835-11	METAL CHIP	15K	5%	1/16W
R420	1-216-835-11	METAL CHIP	15K	5%	1/16W
R421	1-216-864-11	METAL CHIP	0	5%	1/16W
R423	1-216-833-11	METAL CHIP	10K	5%	1/16W
R424	1-216-844-11	METAL CHIP	82K	5%	1/16W
R425	1-216-845-11	METAL CHIP	100K	5%	1/16W
R426	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R427	1-216-835-11	METAL CHIP	15K	5%	1/16W
R436	1-216-833-11	METAL CHIP	10K	5%	1/16W
R443	1-216-844-11	METAL CHIP	82K	5%	1/16W
R444	1-216-843-11	METAL CHIP	68K	5%	1/16W
R445	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R446	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R447	1-216-835-11	METAL CHIP	15K	5%	1/16W
R448	1-216-835-11	METAL CHIP	15K	5%	1/16W
R449	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R450	1-216-833-11	METAL CHIP	10K	5%	1/16W
R451	1-216-821-11	METAL CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R454	1-216-795-11	RES-CHIP	6.8	5%	1/16W
R458	1-216-833-11	METAL CHIP	10K	5%	1/16W
R459	1-216-833-11	METAL CHIP	10K	5%	1/16W
R460	1-216-845-11	METAL CHIP	100K	5%	1/16W
R462	1-216-833-11	METAL CHIP	10K	5%	1/16W
R463	1-216-821-11	METAL CHIP	1K	5%	1/16W
R464	1-218-899-11	METAL CHIP	150K	0.5%	1/16W
R465	1-216-821-11	METAL CHIP	1K	5%	1/16W
R466	1-216-821-11	METAL CHIP	1K	5%	1/16W
R467	1-216-821-11	METAL CHIP	1K	5%	1/16W
R468	1-216-821-11	METAL CHIP	1K	5%	1/16W
R469	1-218-889-11	METAL CHIP	56K	0.5%	1/16W
R470	1-218-850-11	METAL CHIP	1.3K	0.5%	1/16W
R471	1-218-899-11	METAL CHIP	150K	0.5%	1/16W
R472	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R473	1-218-850-11	METAL CHIP	1.3K	0.5%	1/16W
R474	1-218-889-11	METAL CHIP	56K	0.5%	1/16W
R476	1-216-813-11	METAL CHIP	220	5%	1/16W
R477	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R478	1-216-836-11	METAL CHIP	18K	5%	1/16W
R479	1-216-836-11	METAL CHIP	18K	5%	1/16W
R480	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R481	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R482	1-216-803-11	METAL CHIP	33	5%	1/16W
R483	1-216-834-11	METAL CHIP	12K	5%	1/16W
R484	1-216-834-11	METAL CHIP	12K	5%	1/16W
R485	1-216-817-11	METAL CHIP	470	5%	1/16W
R486	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R487	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R488	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R489	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R490	1-216-817-11	METAL CHIP	470	5%	1/16W
R491	1-216-821-11	METAL CHIP	1K	5%	1/16W
R492	1-216-817-11	METAL CHIP	470	5%	1/16W
R493	1-216-817-11	METAL CHIP	470	5%	1/16W
R494	1-216-817-11	METAL CHIP	470	5%	1/16W
R496	1-216-821-11	METAL CHIP	1K	5%	1/16W
R497	1-216-821-11	METAL CHIP	1K	5%	1/16W
R501	1-216-809-11	METAL CHIP	100	5%	1/16W
R502	1-216-833-11	METAL CHIP	10K	5%	1/16W
R503	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R504	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R505	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R506	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R507	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R508	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R512	1-216-864-11	METAL CHIP	0	5%	1/16W
R513	1-216-864-11	METAL CHIP	0	5%	1/16W
R514	1-216-864-11	METAL CHIP	0	5%	1/16W
R515	1-216-864-11	METAL CHIP	0	5%	1/16W
R516	1-216-864-11	METAL CHIP	0	5%	1/16W
R517	1-216-833-11	METAL CHIP	10K	5%	1/16W
R518	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R523	1-216-864-11	METAL CHIP	0	5%	1/16W
R524	1-216-864-11	METAL CHIP	0	5%	1/16W
R526	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R527	1-216-864-11	METAL CHIP	0	5%	1/16W
R529	1-216-833-11	METAL CHIP	10K	5%	1/16W
R530	1-216-833-11	METAL CHIP	10K	5%	1/16W
R540	1-216-864-11	METAL CHIP	0	5%	1/16W

MB-94 POWER BLOCK

Ref. No.	Part No.	Description			Remarks
R542	1-216-864-11	METAL CHIP	0	5%	1/16W
R543	1-216-797-11	METAL CHIP	10	5%	1/16W
R603	1-216-809-11	METAL CHIP	100	5%	1/16W (CX870D)
R605	1-216-864-11	METAL CHIP	0	5%	1/16W (CX870D)
R701	1-216-864-11	METAL CHIP	0	5%	1/16W (CX860)
R710	1-216-864-11	METAL CHIP	0	5%	1/16W (CX870D)
R711	1-216-864-11	METAL CHIP	0	5%	1/16W (CX870D)
R712	1-216-833-11	METAL CHIP	10K	5%	1/16W (CX870D)
R714	1-216-841-11	METAL CHIP	47K	5%	1/16W (CX870D)
R715	1-216-841-11	METAL CHIP	47K	5%	1/16W (CX870D)
R719	1-216-841-11	METAL CHIP	47K	5%	1/16W (CX870D)
R720	1-216-841-11	METAL CHIP	47K	5%	1/16W (CX870D)
R721	1-216-841-11	METAL CHIP	47K	5%	1/16W (CX870D)
R722	1-216-841-11	METAL CHIP	47K	5%	1/16W (CX870D)
R723	1-216-809-11	METAL CHIP	100	5%	1/16W (CX870D)
R724	1-216-841-11	METAL CHIP	47K	5%	1/16W (CX870D)
R725	1-216-841-11	METAL CHIP	47K	5%	1/16W (CX870D)
R727	1-216-841-11	METAL CHIP	47K	5%	1/16W (CX870D)
R728	1-216-841-11	METAL CHIP	47K	5%	1/16W (CX870D)
R729	1-216-841-11	METAL CHIP	47K	5%	1/16W (CX870D)
R731	1-216-864-11	METAL CHIP	0	5%	1/16W (CX870D)
R733	1-216-841-11	METAL CHIP	47K	5%	1/16W (CX870D)
R750	1-216-864-11	METAL CHIP	0	5%	1/16W (CX860)
R751	1-216-864-11	METAL CHIP	0	5%	1/16W (CX860)
R752	1-216-864-11	METAL CHIP	0	5%	1/16W (CX860)
R753	1-216-864-11	METAL CHIP	0	5%	1/16W (CX860)
R754	1-216-864-11	METAL CHIP	0	5%	1/16W (CX860)
R755	1-216-864-11	METAL CHIP	0	5%	1/16W (CX860)
R760	1-216-864-11	METAL CHIP	0	5%	1/16W
R761	1-216-864-11	METAL CHIP	0	5%	1/16W
R762	1-216-864-11	METAL CHIP	0	5%	1/16W
R771	1-216-864-11	METAL CHIP	0	5%	1/16W
R772	1-216-864-11	METAL CHIP	0	5%	1/16W (CX870D)
R774	1-216-864-11	METAL CHIP	0	5%	1/16W
R781	1-216-864-11	METAL CHIP	0	5%	1/16W (CX870D)
R785	1-216-864-11	METAL CHIP	0	5%	1/16W (CX860)
R801	1-216-833-11	METAL CHIP	10K	5%	1/16W
R802	1-216-838-11	METAL CHIP	27K	5%	1/16W
R805	1-216-844-11	METAL CHIP	82K	5%	1/16W
R806	1-216-844-11	METAL CHIP	82K	5%	1/16W
R807	1-216-844-11	METAL CHIP	82K	5%	1/16W
R808	1-216-838-11	METAL CHIP	27K	5%	1/16W
R809	1-216-833-11	METAL CHIP	10K	5%	1/16W
R812	1-216-864-11	METAL CHIP	0	5%	1/16W
R826	1-216-809-11	METAL CHIP	100	5%	1/16W
R827	1-216-844-11	METAL CHIP	82K	5%	1/16W
R834	1-216-833-11	METAL CHIP	10K	5%	1/16W
R835	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R837	1-216-813-11	METAL CHIP	220	5%	1/16W
R838	1-216-813-11	METAL CHIP	220	5%	1/16W
R839	1-216-813-11	METAL CHIP	220	5%	1/16W
R840	1-216-864-11	METAL CHIP	0	5%	1/16W
R841	1-216-864-11	METAL CHIP	0	5%	1/16W

< COMPOSITION CIRCUIT BLOCK >

* RB101	1-233-270-11	NETWORK, RES (8 GANG) 10K	
* RB102	1-233-270-11	NETWORK, RES (8 GANG) 10K	

< VARIABLE RESISTOR >

RV501	1-223-583-11	RES, ADJ, CARBON 1K	

< VIBRATOR >

X101	1-781-185-21	VIBRATOR, CERAMIC (12.5MHz)	
X102	1-781-950-11	VIBRATOR, CRYSTAL (27MHz)	

* ⚠	1-468-512-11	POWER BLOCK (MPW1241) (CX860:US,CND/CX870D)			
		**********			
* ⚠	1-468-512-21	POWER BLOCK (MPW1141) (CX860:AEP,UK)			
		********** (Ref.No.;6000Series)			

< CAPACITOR >

C5	9-885-007-96	ELECT	150u	200V (CX860:US,CND/CX870D)
C5	9-885-007-98	ELECT	68u	400V (CX860:AEP,UK)
C101	9-885-006-67	ELECT	330uF	35V
C111	9-885-006-66	ELECT	33uF	35V
C301	9-885-006-65	ELECT	680uF	25V
C306	9-885-006-66	ELECT	33uF	35V
C307	9-885-006-66	ELECT	33uF	35V
C401	9-885-006-67	ELECT	330uF	35V

< DIODE >

D4	8-719-901-33	DIODE	1SS133
D5	8-719-063-16	DIODE	HZS9B2
D6	8-719-901-33	DIODE	1SS133
D7	8-719-901-33	DIODE	1SS133
D11	8-719-054-32	DIODE	ERA15-06

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
D12	8-719-054-32	DIODE ERA15-06	
D13	8-719-054-32	DIODE ERA15-06	
D14	8-719-054-32	DIODE ERA15-06	
D21	8-719-901-33	DIODE 1SS133	
D22	8-719-901-33	DIODE 1SS133	
D101	8-719-210-51	DIODE 21DQ10	
D102	8-719-063-04	DIODE HZS7A2	
D103	9-885-006-59	DIODE HZ18CP	
D104	8-719-901-33	DIODE 1SS133	
D110	8-719-901-33	DIODE 1SS133	
D205	8-719-901-33	DIODE 1SS133	
D301	9-885-006-58	DIODE ERB83-006	
D302	9-885-006-58	DIODE ERB83-006	
D401	8-719-210-51	DIODE 21DQ10	
D402	8-719-063-04	DIODE HZS7A2	
D404	8-719-901-33	DIODE 1SS133	
D410	8-719-901-33	DIODE 1SS133	
		< FUSE >	
⚠F1	1-533-418-11	FUSE (2.5A/125V) (CX860:US,CND/CX870D)	
⚠F1	1-576-229-11	FUSE (2.5A/250V) (CX860:AEP,UK)	
		< IC >	
IC302	8-759-234-89	IC TA76431S	
IC303	8-759-651-05	IC TA76431AS	
		< IC LINK >	
⚠P301	1-533-593-11	IC LINK 2A 60V	
⚠P302	1-533-592-11	IC LINK 1.6A 60V	
		< PHOTO COUPLER >	
⚠PC1	9-885-006-57	PHOTO COUPLER PC817 (CX860:US,CND/CX870D)	
⚠PC1	9-885-006-70	PHOTO COUPLER PC123 (CX860:AEP,UK)	
		< TRANSISTOR >	
Q1	9-885-006-63	TRANSISTOR 2SK2638 (CX860:US,CND/CX870D)	
Q1	9-885-006-72	TRANSISTOR 2SK2717 (CX860:AEP,UK)	
Q2	9-885-006-61	TRANSISTOR 2SC1741AS	
Q101	9-885-006-60	TRANSISTOR 2SB1642	
Q102	8-729-920-70	TRANSISTOR 2SC1740S	
Q103	8-729-920-70	TRANSISTOR 2SC1740S	
Q104	8-729-920-68	TRANSISTOR 2SA933S	
Q201	9-885-006-62	TRANSISTOR 2SJ525	
Q301	9-885-006-60	TRANSISTOR 2SB1134	
Q302	8-729-920-70	TRANSISTOR 2SC1740S	
Q303	8-729-920-70	TRANSISTOR 2SC1740S	
Q304	8-729-920-68	TRANSISTOR 2SA933S	
Q401	8-729-030-18	TRANSISTOR 2SD2525	
Q402	8-729-920-68	TRANSISTOR 2SA933S	
Q403	8-729-920-68	TRANSISTOR 2SA933S	
Q404	8-729-920-70	TRANSISTOR 2SC1740S	
		< TRANSFORMER >	
⚠T1	9-885-006-68	TRANSFORMER 2D15 (CX860:US,CND/CX870D)	
⚠T1	9-885-007-99	TRANSFORMER 2D26 (CX860:AEP,UK)	

Ref. No.	Part No.	Description	Remarks
		< SWITCH >	
⚠SW1	9-885-006-69	SWITCH (⏻ POWER)	
*	A-6065-609-A	SW-345 BOARD, COMPLETE ********** (Ref.No.;1000Series)	
		< CONNECTOR >	
CN301	1-794-786-11	CONNECTOR, FFC/FPC 3P	
		< SWITCH >	
S301	1-771-349-21	SWITCH, KEYBOARD (EJECT)	
*	A-6065-632-A	TK-59 BOARD, COMPLETE ********** (Ref.No.;1000Series)	
		< CAPACITOR >	
C004	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C005	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C006	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C007	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C008	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C009	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C010	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C011	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C012	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C013	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C014	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C015	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C016	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C017	1-164-172-11	CERAMIC CHIP 0.0056uF 10% 25V	
C018	1-164-739-11	CERAMIC CHIP 560PF 5% 50V	
C019	1-164-172-11	CERAMIC CHIP 0.0056uF 10% 25V	
C020	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C021	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C022	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C023	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C024	1-164-730-11	CERAMIC CHIP 0.0012uF 10% 50V	
C025	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C026	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C027	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	
C028	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C029	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C030	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C031	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C032	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C033	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C034	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C035	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C036	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C037	1-164-739-11	CERAMIC CHIP 560PF 5% 50V	
C038	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
C039	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C040	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C041	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
		< CONNECTOR >			
CN001	1-785-700-21	CONNECTOR, FPC (ZIF) 23P			
CN002	1-566-529-11	CONNECTOR, FPC (ZIF) 13P			
CN003	1-794-789-21	CONNECTOR, FFC/FPC 20P			
CN004	1-794-788-21	CONNECTOR, FFC/FPC 16P			
		< DIODE >			
D003	8-719-988-61	DIODE 1SS355TE-17			
		< IC >			
IC001	8-759-567-24	IC SSI33P3722			
		< COIL >			
L001	1-412-031-11	INDUCTOR CHIP	47uH		
		< TRANSISTOR >			
Q001	8-729-903-46	TRANSISTOR	2SB1132-P		
Q002	8-729-402-42	TRANSISTOR	UN5213		
		< RESISTOR >			
R001	1-216-815-11	METAL CHIP	330	5%	1/16W
R002	1-216-809-11	METAL CHIP	100	5%	1/16W
R003	1-216-809-11	METAL CHIP	100	5%	1/16W
R004	1-216-837-11	METAL CHIP	22K	5%	1/16W
R005	1-216-013-00	METAL CHIP	33	5%	1/10W
R006	1-216-013-00	METAL CHIP	33	5%	1/10W
R007	1-216-841-11	METAL CHIP	47K	5%	1/16W
R008	1-216-797-11	METAL CHIP	10	5%	1/16W
R009	1-216-834-11	METAL CHIP	12K	5%	1/16W
R015	1-216-833-11	METAL CHIP	10K	5%	1/16W
R016	1-216-833-11	METAL CHIP	10K	5%	1/16W
R017	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R018	1-216-833-11	METAL CHIP	10K	5%	1/16W
R022	1-216-811-11	METAL CHIP	150	5%	1/16W
R023	1-216-820-11	METAL CHIP	820	5%	1/16W
R024	1-216-821-11	METAL CHIP	1K	5%	1/16W
R025	1-216-813-11	METAL CHIP	220	5%	1/16W
R029	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
		TM-128 BOARD, COMPLETE			
		**********			
		(Ref.No.;1000Series)			
		< CAPACITOR >			
C131	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C132	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
		< CONNECTOR >			
* CN131	1-564-013-11	PIN, CONNECTOR 3P			

Ref. No.	Part No.	Description			Remarks
		TS-151 BOARD, COMPLETE			
		**********			
		(Ref.No.;5000Series)			
		< CONNECTOR >			
CN101	1-794-834-11	CONNECTOR, FFC/FPC 11P			
CN102	1-569-333-11	CONNECTOR, BOARD TO BOARD 3P			
CN103	1-794-787-11	CONNECTOR, FFC/FPC 6P			
		< JUMPER RESISTOR >			
JR191	1-216-296-91	SHORT	0		
JR192	1-216-296-91	SHORT	0		
JR193	1-216-296-91	SHORT	0		
JR194	1-216-296-91	SHORT	0		
		< PHOTO INTERRUPTER >			
PH101	8-749-017-89	IC SPI-237			
		< TRANSISTOR >			
Q101	8-729-026-49	TRANSISTOR	2SA1037AK-T146-R		
Q102	8-729-026-49	TRANSISTOR	2SA1037AK-T146-R		
		< RESISTOR >			
R101	1-216-043-91	RES-CHIP	560	5%	1/10W
R104	1-216-089-11	RES-CHIP	47K	5%	1/10W
R105	1-216-089-11	RES-CHIP	47K	5%	1/10W
		MISCELLANEOUS			
		**********			
⚠3	1-468-512-11	POWERBLOCK (MPW1241)			
		(CX860:US,CND/CX870D)			
⚠3	1-468-512-21	POWERBLOCK (MPW1141) (CX860:AEP,UK)			
4	1-500-386-11	FILTER, CLAMP (FERRITE CORE)			
⚠7	1-782-960-11	CORD,POWER (CX860:AEP,UK)			
⚠7	1-783-531-31	CORD,POWER (CX860:US,CND)			
⚠7	1-757-281-11	CORD,POWER (CX870D)			
8	1-757-222-11	CABLE, FLAT (FAC-011)			
12	1-757-225-11	CABLE, FLAT (FAM-007)			
18	1-757-236-11	CABLE, FLAT (FAE-003)(CX860:AEP,UK)			
19	1-757-235-11	CABLE, FLAT (FAE-002)(CX860:AEP,UK)			
20	1-476-249-61	REMOTE COMMANDER (RMT-D123A)			
		(CX860:US,CND)			
20	1-476-249-71	REMOTE COMMANDER (RMT-D123P)			
		(CX860:AEP,UK)			
20	1-476-249-81	REMOTE COMMANDER (RMT-D124A)(CX870D)			
58	1-757-234-11	CABLE, FLAT (FDD-003)			
64	1-757-224-11	CABLE, FLAT (FAF-004)			
66	1-757-231-11	CABLE, FLAT (FLS-003)			
69	1-476-273-11	ENCODER, ROTARY			
71	1-757-230-11	CABLE, FLAT (FLR-003)			
74	1-757-232-11	CABLE, FLAT (FTD-001)			
104	1-757-229-11	CABLE, FLAT (FTC-003)			
110	1-757-223-11	CABLE, FLAT (FAK-001)			
111	1-757-228-11	CABLE, FLAT (FMC-014)			
154	1-757-226-11	CABLE, FLAT (FMK-005)			
155	1-757-227-11	CABLE, FLAT (FMK-006)			
162	1-757-233-11	CABLE, FLAT (FLC-002)			

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
M131	1-541-632-11	MOTOR, DC	
ND101	1-517-834-21	FLUORESCENT INDICATOR TUBE	

ACCESSORIES
****

	1-476-249-61	REMOTE COMMANDER (RMT-D123A) (CX860:US,CND)
	1-476-249-71	REMOTE COMMANDER (RMT-D123P) (CX860:AEP,UK)
	1-476-249-81	REMOTE COMMANDER (RMT-D124A)(CX870D)
	1-575-334-41	CORD,CONNECTION (CX870D)
	1-575-335-21	CORD,CONNECTION (S-VIDEO CABLE 1.5m) (CX860)
	1-751-271-12	CORD,CONNECTION (CX860:AEP,UK)
	1-757-411-11	CORD,CONNECTION (CX860)
	1-775-454-21	CORD,CONNECTION (CX870D)
	1-776-078-31	CORD,CONNECTION (CX870D)
	1-777-360-21	CORD,CONNECTION (COAXIAL 1.5m)(CX860)
	1-790-938-11	CORD,CONNECTION (1.5m) (CX860:US,CND)
	3-064-299-11	MANUAL, INSTRUCTION (ENGLISH) (CX860:US,CND)
	3-064-299-21	MANUAL, INSTRUCTION (FRENCH) (CX860:US,CND)
	3-064-299-31	MANUAL, INSTRUCTION (ENGLISH) (CX860:AEP,UK)
	3-064-299-41	MANUAL, INSTRUCTION (FRENCH) (CX860:AEP)
	3-064-299-51	MANUAL, INSTRUCTION (GERMAN) (CX860:AEP)
	3-064-299-61	MANUAL, INSTRUCTION (ITALIAN) (CX860:AEP)
	3-064-299-71	MANUAL, INSTRUCTION (DUTCH) (CX860:AEP)
	3-064-299-81	MANUAL, INSTRUCTION (SPANISH) (CX860:AEP)
	3-064-300-11	MANUAL, INSTRUCTION (ENGLISH) (CX870D)
	3-064-300-21	MANUAL, INSTRUCTION (FRENCH) (CX870D)
	3-709-493-11	COVER, BATTERY

****
HARDWARE LIST
****

#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3
#2	7-628-253-90	SCREW +PS 2.6X4

Sony Corporation
Network Entertainment Group

9-921-779-11

2000J1658-1
Printed in Japan ©2000.10
Published by Quality Assurance Dept.